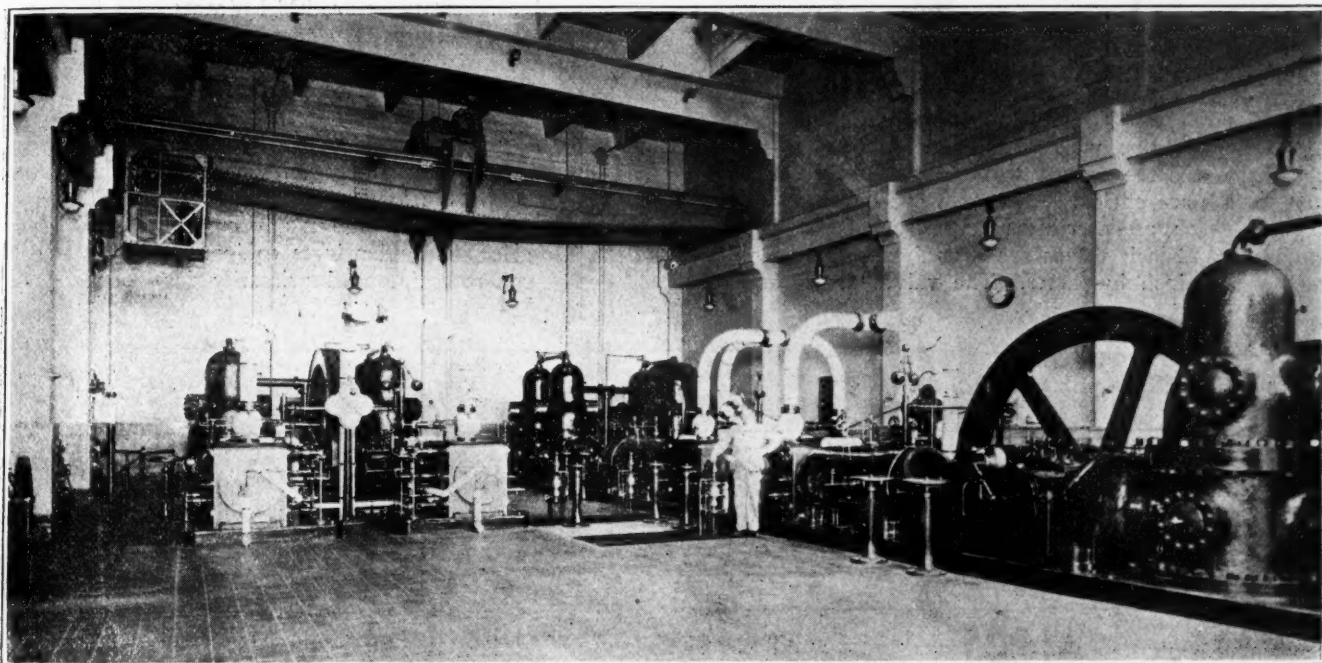


Municipal Journal

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No. 4.



Interior of Pumping Station, Baltimore High Pressure Service

BALTIMORE HIGH PRESSURE FIRE SERVICE

Special Distribution System and Pumping Station, Tested Last Month by National Board of Fire Underwriters—Special Portable Hydrant Heads—Pump and Boiler Plant—Special Fire Companies

PARTIAL descriptions of the high pressure fire service of Baltimore have been given by us in our issues of July 6, 1910, and June 13, 1912. On June 7 of this year several tests of the system were made by the engineers of the National Board of Fire Underwriters, and their conclusions have recently been made public, and will be referred to later on in this article. The system was placed in service on April 23 of this year. It was designed and the construction supervised by Daniel B. Banks, consulting engineer of the Board of Fire Commissioners of the city. Its operation and maintenance are in charge of August Emrich, chief of the fire department, with Thos. H. Meushaw, superintendent of machinery, in direct control.

In general the service consists of a special distribution system and a pumping station. A signaling system has been established (although under the system of operation it is not necessary to communicate with the pumping station during fires), this system consisting of a separate telephone circuit with instruments at fire alarm quarters,

fire headquarters, the chief's night quarters and the pumping station, with provisions for connecting portable telephone sets in each fire alarm box in the high pressure district. Two fire department companies have been established for the special service demanded by the use of the high pressure lines.

The distribution system, a map of which is shown herewith, does not entirely protect the congested value district, which is indicated on the map by the hatching lines. The surface elevations within the limits of the distribution system range from 8 ft. to 100 ft. above mean low water in the harbor. In general, the pipe system consists of three lines of 16-inch mains running east and west and the same number north and south, these being placed three blocks apart, with 10-inch mains in the intermediate streets. Altogether there are 8.856 miles of mains, of which 0.066 mile is 30-inch, .025 mile of 24-inch, 3.24 miles of 16-inch and 5.30 miles of 10-inch. Eight-inch pipe is used as hydrant branches, there being a total of about 2 miles of this. Connection specials have been left

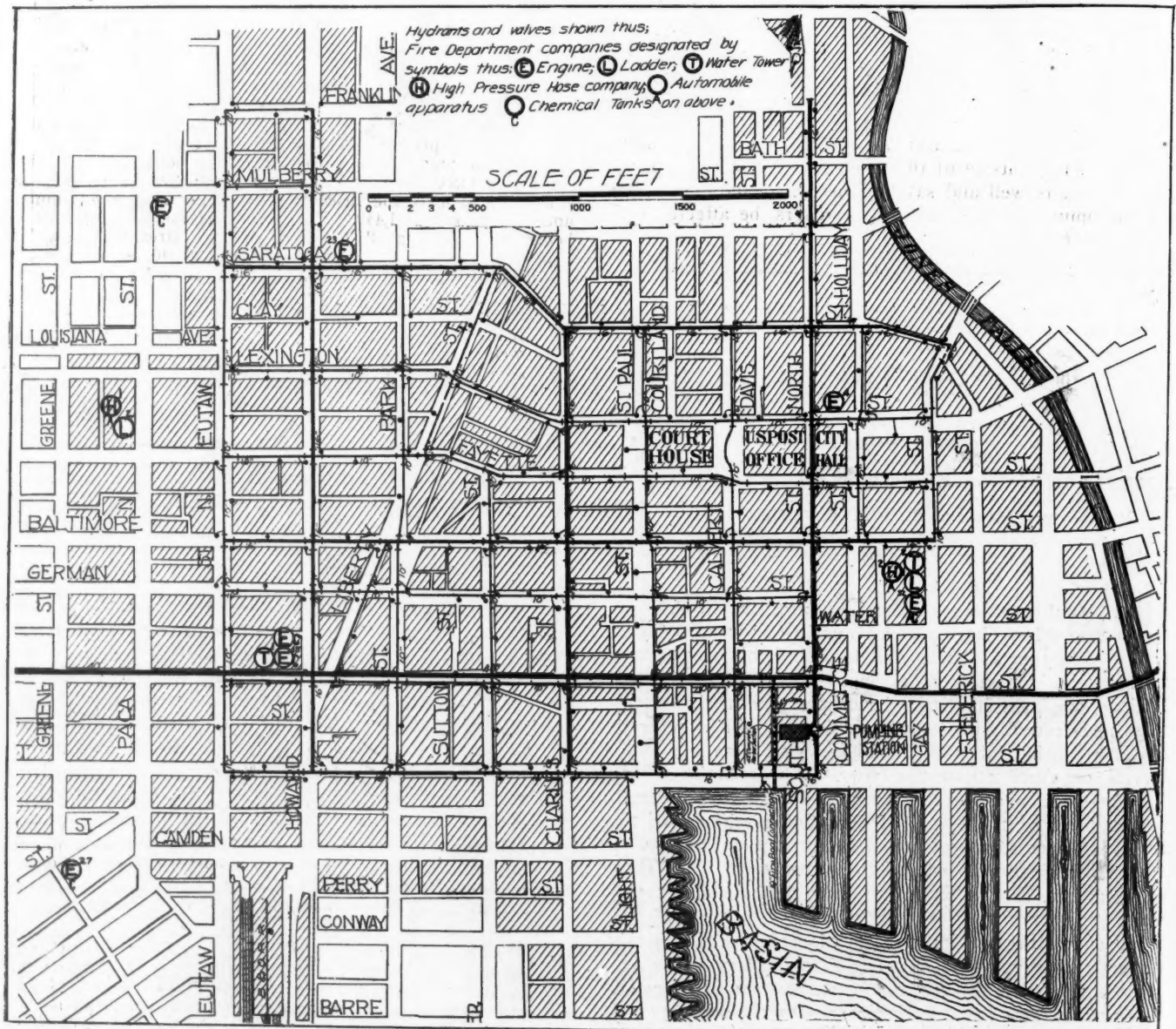
at street intersections at the border streets to permit extending the system in all directions.

The pipe used in the distribution is lap-welded, soft open hearth steel, 7-16 inch thick for the 8-inch to 16-inch pipe and $\frac{1}{2}$ inch for the 24-inch pipe; these being calculated for an assumed working pressure of 300 lbs. per square inch. The entire system, including valves and hydrants, was tested in sections under a pressure of 600 pounds before back filling. In one test witnessed by representatives of the Board of Fire Underwriters the pressure on a 10-inch line was carried up to 1,000 lbs., at which the only signs of leakage were through the gaskets between the bonnet and body flanges of the valves at either end of the line. The electrical conductivity of the joints is made approximately equal to that of the body of the pipe, the pipe is coated with about 1-32 inch of mineral rubber asphalt, and is bonded to the street railway return feeders at several points, all with the object of avoiding destruction by electrolysis. An inspection in 1912 of a section of the pipe which had been two years in the ground, showed the coating to be in perfect condition.

All valves are enclosed in large valve boxes built upon a concrete slab, as described in our issue of July 6, 1910. The 16 and 24-inch valves are geared and the latter provided with 4-inch by-passes. The valves are located on

property lines, ordinarily four at each street intersection, the average interval between valves being 300 ft. and the maximum 480 ft. In the majority of cases two hydrants would be affected by a single shut-off, and in about 30 per cent. of the cases but one hydrant. Each valve box is provided with a key which cannot be removed from the valve except when it is wide open. Relief valves are employed, set to open and waste into the sewers at 305 pounds pressure, and air valves are provided at all summits.

The hydrants were briefly described in our issue of June 13. They have 28 square inches minimum waterway and the heads are connected to the permanent sub-surface section by giving them a slight turn which locks them in position. At present there are 226 hydrants with an average interval between of 170 feet and an average area served by each of 42,700 sq. ft. They are located under the sidewalk at street intersections between the corner of the building line and the curb corner, at alley intersections, and alternating on opposite sides of the streets. Markers have been installed on trolley poles and other convenient points to indicate the locations of the hydrants. The department has refused to permit any connections between the high service line and private equipments in buildings, since this system is intended primarily for serious fires

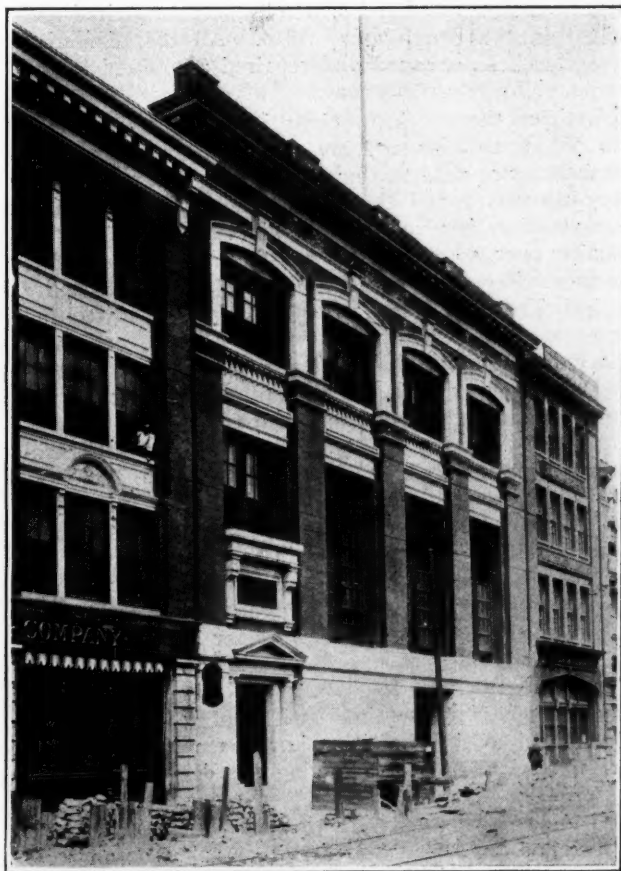


BALTIMORE'S CONGESTED VALUE DISTRICT AND THE HIGH PRESSURE FIRE SERVICE.

only, it would be weakened by such connections and the department could not maintain proper control over them nor be assured that there were no leaks in the system. It is intended, however, to have the first company reaching the fire connect to all such equipments by means of short lines of hose from the hydrant to the outside connection, thus assuring positive control of the amount of water and lessening damage from flooding after the extinguishment of fire.

The water is supplied to the high pressure system by a pumping station, in addition to which a 10-inch fire boat connection, with gate valve and check valve, is located at the water front near the pumping station. The latter is located near the water front, extending from a street to an alley. On each side of it is a four-story mercantile building with blank walls extending 10 to 20 feet above the station roof; opposite the front of the station is a vacant lot, and across the alley from the rear are three-story buildings with wired glass windows or fire shutters.

The station is of fireproof construction throughout, except the floor surfacing, and the inside doors of the third story. The boiler room is separated from the pump room by a fire wall having a single opening protected by double fire doors. The side walls are blank; the windows in the front are of large area, but protected by wire glass in metal frames and with rolling fire shutters inside, while the rear wall has a single door opening protected by double fire doors. The roof is designed sufficiently strong to withstand the possible failure of the walls of the adjoining buildings. Eight-inch risers have been extended to the roof and can be used with monitor nozzles or with hose and nozzles for fighting fires in adjoining buildings. It is thus seen that unusual precautions are taken to protect the installation against damage by fires in its vicinity. Although not outside of the conflagration zone, the pumping station is well and safely constructed and should not, in the opinion of the Fire Underwriters, be affected by a conflagration.



HIGH PRESSURE PUMPING STATION.

The pumping plant consists of three Allis-Chalmers horizontal, Corliss, twin, simple, non-condensing, crank and flywheel pumps, 22 x 13 $\frac{3}{4}$ x 36 inch, the three having a combined capacity of 12,770 gallons per minute at 242 pounds pressure. Also an Epping-Carpenter horizontal duplex, direct acting, compound, non-condensing engine, 14 and 25 x 12 x 16, with a capacity of 1,000 gallons per minute. Steam is provided by three Edge Moore inclined water tube boilers, with under-feed mechanical stokers, each having a rated h.p. of 1,160 and designed to burn bituminous coal. The boilers are separately set and have independent stacks. Space is reserved for an additional boiler and for a fourth large pump. The steam ends of the pumps are steam-jacketed and kept hot at all times by steam from the exhaust or direct from the boilers.

The board describes the equipment as being "well installed, of a very reliable type and is being well operated; it has withstood tests as severe as any probable in fire service. Many ingenious automatic arrangements controlling the operation of pumps and boilers increase reliability and lessen the number of men necessary for operation."

Illustrations accompanying this article (from photographs for which we are indebted to S. S. Scott, of Baltimore), show the exterior of the pumping station and the machinery within as they appeared last week.

As stated, this system was tested by the engineers of the National Board of Fire Underwriters in June of this year. The test was described by the board as follows:

To test the readiness of the pumping station, a fire alarm box was pulled at 4:30 a.m. at Lexington and Howard streets. Immediately upon arrival of the High Pressure hose company, the system was put into service, using 3-inch lines siamesed into a 2 $\frac{1}{2}$ -inch nozzle. At the station an engineer and stoker were on duty; at 4:31 the remainder of the crew had responded from sleeping quarters; by 4:31:15 two large pumps had been started and pressure increased to 190 pounds, reaching 280 pounds by 4:33, at which time water was turned on by the hose company; at 4:34 the discharge was 1,050 gallons a minute, and at 4:37 it was 1,440 gallons, pump pressure at the station being maintained at 240 to 250 pounds; streams from two more 2 $\frac{1}{2}$ -inch nozzles were started at 4:37:40, giving a total discharge of 4,000 gallons a minute. A second high pressure company, using six 3-inch lines siamesed into three 2 $\frac{1}{2}$ -inch nozzles, was put into service on Liberty street, making a total flow of 7,100 gallons a minute; both steam and water pressures were well maintained at the pumping station.

A second test, to determine the capacity of the station, was started at 10 a.m.; lines were run to six 2 $\frac{1}{2}$ -inch and six 2-inch nozzles, discharging on Pratt street. Pumps were run individually, with discharges as given in Table I, and were stopped and started under conditions similar to a breakdown of a unit at time of fire; a uniform discharge was maintained and pumps were well and easily handled. Pump governors were set for a cut-off at about 52 revolutions per minute. With all three large pumps running, the total discharge was 12,770 gallons per minute, against an average pump pressure of 242 pounds, suction pressure of 31 pounds and net water pressure of 211 pounds; steam was uniformly maintained at 150 pounds. The average number of revolutions of the pumps was 50.6 per minute.

A test for leakage of the system indicated a loss of 26 gallons per minute, at a pressure of 250 pounds, part of which was through the pumps and part due to air valves operating on the system.

Test of the hydrant head indicated a loss in the outlet and the regulator valve equivalent to about 10 pounds for a flow of 300 gallons a minute from a single outlet, 20 pounds for 500 gallons, and 25 pounds for 600 gallons; these cannot be considered excessive losses. The hydrant heads have been provided with a screen to catch coarse material; the tests showed that these became clogged and introduced a very high friction loss, amounting to 30 pounds for 2,300 gallons a minute flowing; as these screens are not necessary to the operation of the hydrants, their removal is advisable.

The board, always conservative in its statements, also comments as follows:

The valve and hydrant distribution is excellent, and the pipe sizes and gridironing are sufficient to enable a good concentration of fire flow without serious loss of pressure. The type of hydrant is unusual for such service, but it appears not to increase the time consumed in getting into action at fires; it is believed that the system of inspections adopted and the steps

taken to secure familiarity with locations will result in hydrants being quickly found, and the ease with which heads can be attached removes one of the main objections to the use of flush hydrants. The separate head permits of the use of regulator valves permanently attached, thus giving excellent control of the pressure on hose lines. * * * The regulators increase the friction loss materially, but not sufficiently to lessen fire protection unless too great a quantity is taken from one outlet.

A steam pressure of 150 pounds is maintained in two boilers at all times, and 150 pounds water pressure is maintained in the distribution system by the small pump. When an alarm is turned in from the high pressure area, steam is turned onto two of the large pumps, which immediately raise the pressure to 250 pounds, the small pump stopping as soon as the water pressure exceeds 150 pounds. The large pumps are automatically governed so as to maintain constant pressure and the stoking of the boilers and forced draft are automatically controlled by the steam consumption, so that the station can be run for several hours without attendants if necessary.

Two fire companies have been established for special service in connection with the high pressure system, each manned by picked men of 2 to 5 years' fire service. Each company is provided with an automobile hose wagon carrying 2,000 feet of 3-inch hose, two hydrant heads, three turret nozzles, and the usual assortment of shut-off nozzles and minor equipment. A high pressure company and four or five engine companies respond to all first alarms, and the second high pressure hose wagon responds to the second alarm. The high pressure company connects immediately to the high pressure system, and the first two engine companies to the regular fire hydrants; the other engine companies connecting to regular hydrants for a reserve force, one using the high pressure system with their hose wagons. Upon the arrival of a hose wagon two men with hydrant head and key run to the hydrant; one man removes the cover (which, if stuck, can easily be broken), and the other places the head in position and, by a slight turn, locks it in place. Water is turned on with the key, and the hose is attached to one or all of the outlets. By means of the regulators on the head, any desirable pressure can be given each line up to full pressure without calling up the pumping station. During a test it was found that two men starting from the middle of the street could remove the hydrant cover, place the head in position and turn on the water in from 18 to 25 seconds. Members of the department are made familiar with the location of these hydrants by frequent inspections during the winter and by means of a blue print map at each station.

CONTINUOUS MOVING PLATFORMS

In our issue of April 14, 1909, we described a method which was proposed by a New York company for carrying passengers comparatively short distances of two or three blocks by means of moving platforms; the general principle being that of having three platforms in addition to the stationary platform at each station, these three platforms being continuously in motion all in the same direction and practically in contact, the outside moving at three miles per hour, the next at six miles, and the third at nine miles, so that a passenger could walk without difficulty successively from the stationary platform across the other two to the one moving nine miles per hour. This last would contain seats and would practically be a subway train without sides or roof.

Such system had not yet been tried in practise, but it seemed to us at the time to possess promising possibilities, and at last it has been adopted as a part of the rapid transit system of New York City, the Rapid Transit Commission having provided for the construction of one in a subway under Thirty-fourth street from the westerly

side of Third avenue to a point between Eighth and Ninth avenues, there being also a loop under Thirty-fourth street from Third to Second avenues to Thirty-fifth street and back to the point of beginning, and a second loop at the other end of the line under Thirty-fourth to and up Ninth avenue and across private property to the point of beginning.

METERS IN MILWAUKEE

A RECENTLY published report of the Bureau of Economy and Efficiency of Milwaukee, Wis., dealing with the operating efficiency of the city waterworks gives the following information concerning meters and metering in that city.

According to the city engineer's report, 97.9 per cent. of the services are metered, or a total of 53,051, of which 48,336 are 5/8-inch meters. It cost the Meter Division an average of 33.4 cents per meter for the year for the total expenses of the division, which is considered by the bureau to be a very creditable showing. Disk, piston, rotary and current meters are used.

"All new meters are thoroughly inspected and tested before they are installed. Small meters, from five-eighths to two inches in size, are tested twice by running ten cubic feet of water at different flows through the meter (according to its measurement) and into a weighing tank. A one-sixteenth inch stream is also passed through the meters to see that they register at this low flow. Whenever a meter registers nine pounds or more over or under the correct ten cubic feet weight or is found to be one and one-half per cent. defective, it is rejected. Most new meters check within a three pound difference in weight. All meters over the two inch size are tested in the same general manner by checking the weight of a measured 100 cubic foot flow to within one and one-half per cent. of accuracy. A one-quarter inch stream must cause these meters to register within the above limit. There were 2,370 new meters tested and 5,534 old meters repaired and examined in the shop during 1910. All old, defective meters after being cleaned and repaired are tested in the same general way as new ones.

"Sometimes the six inch, eight inch and twelve inch meters are tested for a 1,000 cubic foot measurement. Large meters are read two or three times each month depending upon size and their water consumption. Much greater attention is given the individual large meters than the smaller ones, so that they always have preference while in the shop. Regulations of the Water Department require a two inch Tee to be placed near the outlet side for testing purposes in all installations of two inch meters and over. The larger meters can then be tested out in place by connecting a test meter in the Tee circuit and passing definite amounts of water through each. If the slip be high or the meter found defective in any way, it is temporarily repaired in place if possible and finally brought to the shop, where it is thoroughly tested and repaired with little delay. Sometimes the slip on piston type meters is temporarily reduced by adding blank washers in the ends of the cylinders to compensate the slip by reducing the cylinder volume and piston travel. This temporary repairing often avoids having the large meters out of service for long periods and facilitates the keeping of records of the large consumers.

"At the present time, the wear and tear on meters is usually measured on the time basis, that is, those meters are brought into the shop that have been in service the longest time since the last repairing was done to them. A better criterion to go by would be the quantity of water which has passed through the different sized meters rather than the time in service, as it is the actual wear and tear due to operation which causes meters to become defective more than the natural depreciation causes."

FRENCH WATER PURIFICATION TESTS

Otto Ozone Plant, with Scrubbers and Prefilters—Rapid and Percolating Sand Filters—Construction and Results Obtained

(Continued from page 78.)

THE OTTO OZONE SYSTEM.

The Otto system employed here used scrubbers and pre-filters prior to treatment with ozonized air. Four scrubbers were used acting in series, and two prefilters acting parallel. The scrubbers were formed of rectangular basins D, the bottom of which were formed with perforated slabs of stone upon which rested beds of broken stone having diameters of 0.10 to 0.15 inches, the beds being 20 inches thick. The water passes in succession through the four scrubbers, passing upward through each, then downward to the bottom of the next in series. Under each scrubber is a connection with the sewer which is controlled by a valve, through which the suspended matter removed by the scrubbers could be drawn off into the sewer. The two prefilters were formed of beds of sand 20 inches thick resting upon perforated slabs of stone, through which the water passed from the top to the bottom and was discharged into a small reservoir. The scrubbers are so arranged (this is not shown in the diagram) that any one can be cut out and by-passed by the water without interfering with the operation of the other three. The deposited matter is flushed out through the waste pipe by means of the water already contained in the scrubber, but it was found that this was not sufficient to carry away all of the sediment, but it was necessary to repeat this several times by filling the scrubber and discharging it in this way. This cleaning was performed about twice a week. The prefilters were cleaned once a month by scraping the sand surface with a rake and flushing off the supernatant water to the sewer by a gate in the side of the tank level with the sand surface. The loss of head in the apparatus was about 4 inches for each scrubber and 3.3 feet for the prefilters. The total area of the four scrubbers was 96.88 square feet, and that of the two prefilters 172.2 square feet.

The water thus clarified was pumped through a meter to the top of an apparatus called an "emulsifier," the purpose of which was to mix the ozonized air with the water. It consisted essentially of two truncated cones placed one above the other a slight distance apart and held in an aspiration chamber into which a pipe discharged the ozonized air; the two truncated cones forming practically a Venturi tube and the ozonized air being discharged opposite the throat of this. As the water flowed from the upper to the lower cone it drew in the ozonized air, and the air and water mixed then descend through a tube or

pipe called the "self-contact column" about 16.4 feet long, the action of the ozone in this being assisted by the pressure, which increased toward the bottom of the column. The water and air then rose through a cylinder which surrounded the column, the air being drawn off at the top and the water flowing over cascades into an enclosed tank, meantime giving off most of the excess of ozone.

The ozonizer employed was that known as the Marmier-Abraham, in which the discharge takes place between two large rectangular sheets of glass which are placed face to face, shown as AA in figure 5. In the plant at Marseilles these plates had a surface area of 27.5 by 24.8 inches and were 0.16 inch thick, the space between them being 0.12 inch. Metallic electrodes BB were placed in contact with the rear surfaces of these glass plates, each being composed of a hollow box through which passed a current of water to prevent heating. The air was removed through a hole through the glass plate A and the corresponding electrode B, thus circulating between the two plates from the periphery to the center, being charged with ozone in the meantime. The air was dried before being introduced into the apparatus by passing through a column of coke covered with chloride of calcium. The electric current used was one of 500 cycles. One pole of the transformer was connected to each of the electrodes BB, and it was therefore necessary that they be insulated from each other, in spite of the current of water which passed through both of them. The electrode B was connected with the ground by the pipes which furnished and removed the cooling water, while the other electrode was insulated and disconnected from the other pipes by having the water discharge into and from it in a spray without establishing electric contact. The ozonized air is taken directly by the tube T to the emulsifier above described.

In testing the apparatus a volt meter, ampere meter and watt meter were used which had been tested at the laboratory of the College of Science. These were placed in the primary circuit of the transformer. The ozonized air was measured by a meter which had been calibrated. During the trials an apparatus was installed automatically cutting off the water supply in case of failure of the electric current used by the ozonizer. The electric energy furnished to the ozonizer was practically constant between 300 and 400 watts, occasionally falling to a minimum of 280 and rising to a maximum of 1,000. The parties supplying this apparatus, however, stated that this should not be taken as the basis of a calculation for a large installation, as the apparatus used in these tests was working at far below its full capacity and could have treated

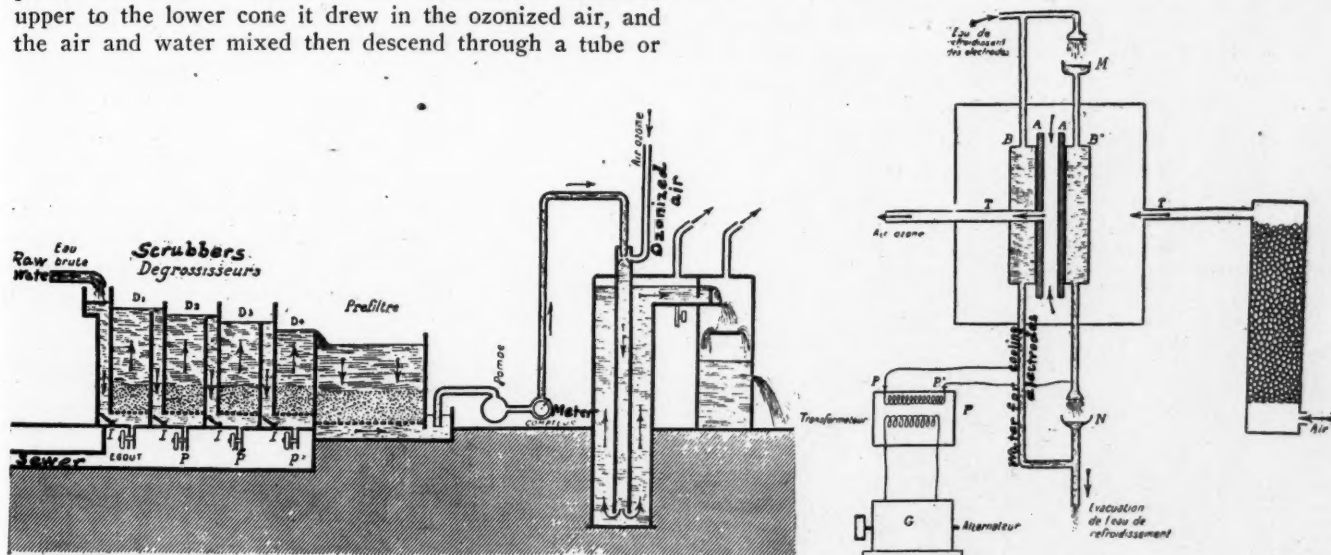


FIG. 5.—SCHEMATIC DRAWING OF OTTO OZONE PLANT AND MARMIER-ABRAHAM OZONIZER.

a much larger quantity of water with little increase in current. It was also found that the ozonizer produced but 20 to 25 grams of ozone, although experiments made upon an industrial installation have shown the production of 40 grams. During this test the quantity of ozone employed varied from 3,937 grams to 1,287 per million gallons of water. The parties furnishing this plant claim that 1,136 is sufficient, but if this is the case it is difficult to see why they used more than double that during the greater part of the experiment; the average having been 2,824.

These conditions make it very difficult to form from the Marseilles tests an exact estimate of the power necessary for sterilizing by the Otto process. If we take as a basis the mean of these tests, 2,824 grams, and if a production of ozone of 40 grams per kw. h. is conceded, it is found that 70.8 watt hours is required for each thousand gallons of water, and the sterilization of 37,000,000 gallons per day necessitates a power of 109 kilowatts.

It was demonstrated for the Otto system, as in the case of the Siemens-de Frise, that the nitrites and nitrates were not increased, nor the hardness changed, and there was a slight decrease in the amount of organic matter. The prefilters furnished a water which was transparent through $26\frac{1}{4}$ feet. The total number of bacteria found in the treated water varied from 1 to 39, the average being 8. *B. coli* was at no time found in the treated water, although as much as 2.64 gallons of this were analyzed. In brief, the system insures a good clarification, does not change the mineral content, and gives continuously most satisfactory results from a bacteriological point of view.

SAND FILTERS

Messrs. Puech and Chabal demonstrated three methods of purification rapid sand filters, percolating sand filters and ultra-violet rays. The water received preliminary treatment in scrubbers and prefilters, which clarified the 158,500 gallons of water per day, which was further purified by the three processes. There were three scrubbers, differing in their dimensions and in the filter materials employed. The water passed through each from the top to the bottom. In each scrubber there was a gravel bed about 11.8 inches thick, that in the first scrubber being coarse gravel, finer gravel in the second, and in the third a fine gravel called "rice grain." In each case this gravel rested upon perforated slabs of stone. The cleaning of the scrubbers was effected by blowing compressed air through them, the compressed air being supplied by perforated pipes laid under the gravel beds. Before cleaning, the basins were emptied down to the level of the gravel; the bubbling of the air through the gravel separated the deposited sediment from the stones and a slight current of water passing across the scrubber carried this dirt to the sewer. The first of the scrubbers had to

be cleaned from two to four times a month, the second less frequently, and the third still less.

On leaving the scrubbers the water was still quite turbid on account of very fine clay particles and was passed through prefilters, of which there were four used in parallel. These were composed of a bed of sand 19.7 inches deep, resting upon a bed of "rice grain" gravel 3.9 inches thick, which in turn rested upon a bed of bricks in the bottom of the filter. Each filter had two discharge valves, one drawing water from the upper level of the sand and the other from the bottom in order to completely empty the basin. These prefilters were cleaned whenever the loss of head exceeded a certain fixed amount, and from .8 to 1.2 inches of sand was then scraped from the surface. The effective filtering area of the scrubbers was about 646 square feet for a flow of 158,500 gallons in 24 hours (1.37 feet per hour).

On leaving the prefilters the water was entirely clarified, so much so that comparatively fine print could be read through a depth of $26\frac{1}{4}$ feet of it.

This water was then divided into three equal parts and passed on to the two sand filter installations and the ultra-violet ray apparatus.

The rapid filter consisted of a bed of fine sand from the river 3.28 feet thick, resting upon 5.9 inches of fine rice grain gravel, which in turn was supported by perforated tiles on the bottom of the basin. The water was allowed to stand on this to a height of 23.6 to 31.5 inches during operation. The rate of filtration should not be allowed to exceed 16.4 feet per hour. In these experiments the rate averaged 10.8 feet. The sand beds were scraped whenever the head exceeded a given amount.

The other filters also were 3.28 feet thick, there being two of them, each capable of treating 26,418 gallons per day, the water being distributed on one by the Baudet system and on the other by the Brocq system. Sand beds operated in this way, it was found, could not be used for two or three months without a thorough cleaning, as the water was not absorbed rapidly enough and formed pools on the surface.

(To be continued.)

SEWAGE TREATMENT PLANS FOR CLEVELAND

SOME time ago the city of Cleveland prepared a sewerage plan which included an intercepting sewer which would discharge the sewage of the entire city into Lake Erie at one point, near the easterly limits of the city; no provision being made for treatment other than rough filters and the discharging of the sewage through a submerged outlet. Recent developments indicate that some form of sewage purification should be adopted by the city, and a preliminary study of the problem indicates that it would be wisest to divide the city into districts for sewage treatment purposes and not attempt to collect the sewage from the entire city at one point. In order to further study the problem a sewage testing station will be operated, it being the intention to carry on tests in sewage disposal at this station for a year, with the object of determining the best method of treating the sewage under local conditions. The construction of this station is nearly completed.

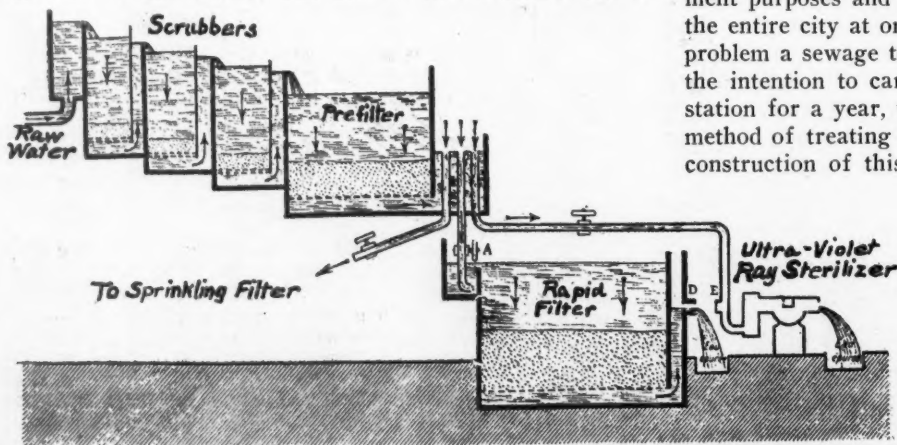


FIG. 6.—PUECH-CHABAL APPARATUS.

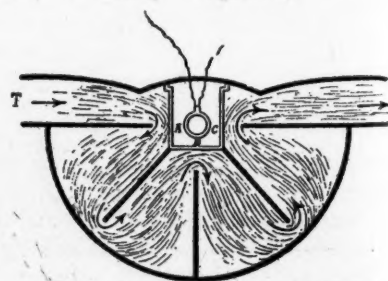


FIG. 7.—ULTRA-VIOLET RAY STERILIZER.

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JULY 25, 1912.

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For Fair and Sensible Contracts

MUCH has been done during the past decade toward placing upon a more satisfactory basis the relation between contractors and the "parties of the first part" and their engineers. To a large degree this is due to increased intelligence among both contractors and engineers; still more, perhaps, to their better understanding of each other. Among the recent agents in bringing about this condition, a most important one is the American Society of Engineering Contractors, which includes in its membership both engineers and contractors. A recent move of this society is the drafting of an act which it aims to have appended to the municipal laws of the various States, which act would regulate the making of contracts by municipalities, including advertising, instructions to bidders, specifications and the execution of the work.

It is realized by many engineers and most contractors that the letter of contracting, if not the spirit, needs reforming. Such expressions as "judgment of the engineer," "as ordered by the engineer," etc., are overworked in too many specifications; and there are, in too many contracts, clauses which all intelligent engineers and contractors know would have no standing in court, such as those holding a contractor responsible for the success of the engineer's plans. Still other requirements are unfair to

the contractor, some even without the excuse of conferring a corresponding benefit on the municipality. A city which tries to get more than it pays for by a "joker" in the contract will, in nine cases out of ten, only furnish to the contractor an imagined justification for "getting even" with the city. The average successful contractor of to-day is a business man who desires to live up to his engagements, who realizes that a reputation for good work and fair dealing are a valuable asset, but who can beat any city at double-dealing if they start that game.

City Regulation of Building Blocks

THE city of Indianapolis, Ind., has an ordinance regulating the construction of concrete building blocks, which specifies the requirements as to materials to be used, and the proportions of the mixture. These proportions may be varied as the case requires, if approved by the inspector of buildings. The ordinance specifies the thickness and height of walls built of such blocks, not over three stories being permitted in buildings used as residences. It is further required that the blocks should be at least 20 days old when used, and that the date of manufacture as well as the maker's brand shall be permanently attached to every block.

The inspector of buildings, Thomas A. Winterrowd, to whom we are indebted for this information, states that the branding of the blocks is required in order that the department may keep informed concerning blocks delivered on the job, and in case they do not come up to the standard they not only can be condemned, but can be traced back to the party furnishing them, and he be held accountable. He has found that after the department of buildings has notified a manufacturer once or twice that blocks delivered by him have been condemned, such manufacturer is more careful in the future.

Losses by Electrolytic Corrosion

PROFESSOR ALBERT* F. GANZ, whose paper on Electrolysis of Street Mains was published in recent issues of MUNICIPAL JOURNAL, in a paper before the American Institute of Electrical Engineers on June 25 described some experiments which he has conducted with the object of determining the loss from electrolytic corrosion of commercial steel, commercial wrought iron, ingot iron and cast iron in two different kinds of soil, one a light sand mixed with some clay, the other a heavy, dark mixture of clay and loam. In the paper he described the technical details of these experiments, from which he stated that the following conclusions appear to be warranted:

The corrosion of iron by electrolysis in the two kinds of street soil tested is independent of the value of the applied voltage, except in so far as this determines the amount of current produced, and less than one volt can produce corrosion by electrolysis.

For the two kinds of street soils tested, and with current densities ranging from 1.7 milliamperes per square foot (18.3 milliamperes per square meter) to 54 milliamperes per square foot (581 milliamperes per square meter), the loss of weight of iron by electrolysis is at least equal to that calculated by Faraday's law, and is in general greater than the theoretical loss. In all cases electrolysis tends to cause localized corrosion from electrolysis with all irons except cast iron; this was especially pronounced in the case of the steel pipes tested. When the surface scale was removed there was practically no difference in the amount of corrosion produced by a given current leaving iron for damp soil between commercial steel, commercial wrought iron, ingot iron and cast iron.

It should be pointed out that the electrical resistance of cast iron is about ten times as great as that of wrought iron, steel or ingot iron, and the usual lead joints in cast iron pipes also have a resistance which is many times greater than the screw coupling joints usual with wrought iron and steel pipes. For these reasons a given voltage drop through ground will cause a much smaller current to flow on a cast iron pipe than on a wrought iron or a steel pipe, thus practically making cast iron pipes much less subject to electrolysis than wrought iron or

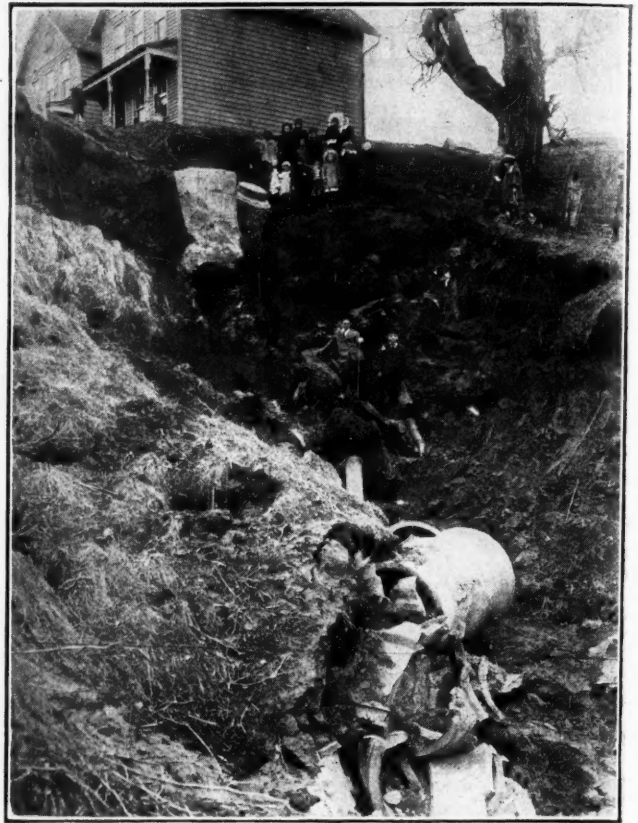
*Given incorrectly as Alfred in the issues of July 11 and 18.

steel pipes. It must also be noted that when a cast iron pipe is corroded by electrolysis, the iron is oxidized but remains in place as a graphitic mass having little mechanical strength, but possessing the ability to maintain the pipe gas-tight and sometimes even water-tight for considerable periods, while with wrought iron or steel pipes this does not occur so that holes and consequent leaks are more quickly produced. Frequently where cast iron pipes appear to be immune from electrolysis because no evidences of leakage have developed, an examination of the pipes would reveal that a great deal of corrosion has actually taken place and that the pipes have been very greatly weakened.

DIFFICULT SEWER LOCATION

ABOUT two years ago the city of Schenectady built the outlets of a 30-inch vitrified storm water sewer and an 8-inch sanitary sewer into a creek, these outlets extending for about 250 feet across unoccupied ground from the street at the top of a hill to the creek at its foot. Early last winter it was noticed that the ground was beginning to wash away from under and around the pipes, and on March 16, when the storm sewer was filled with surface water, a considerable break developed and the hillside above the pipes and the pipes themselves were carried down with the rush of water, a gully being washed out 30 or 40 feet wide, and nearly as deep in some places. The condition after the washout is shown in the accompanying illustration. City Engineer W. Thomas Wooley states that in his judgment the washout was due to the fact that the sewers were laid in a soil which is running sand, without the use of concrete, sheeting or piling. He is informed that the city has previously had trouble with this same line, and similar experiences have been had on one of the other old sewer lines.

Both of these lines have now been replaced in a much more substantial manner. The outlet to the 30-inch storm sewer was rebuilt with 30-inch cast iron pipe, and the 8-inch sanitary sewer was also rebuilt of cast iron pipe. The latter had previously been constructed of this material and the same pipes were used in the reconstruction, with the exception of two lengths which had probably sunk into the wet sand, which is really of a quicksand nature. As shown in the photograph, these two lines are now supported by substantial concrete piers at each joint.



UPPER END OF OUTLET LINES AFTER WASHOUT.

The concrete extends from $2\frac{1}{2}$ to 4 feet below the bottom of the pipe and each pier is supported by two wooden piles driven from 12 to 25 feet below the surface. This work, which has just been completed, is at present above ground, but will gradually be covered with soil from street and cellar excavations. As the joints of the iron pipe are embedded in concrete, there would seem to be no possibility of a repetition of the washout from leaky joints.



SEWERS REPLACING THOSE WASHED OUT.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance

ROADS AND PAVEMENTS

Do Not Like Cement Road

Smithtown, L. I., N. Y.—Smithtown officials are not satisfied with the experimental piece of cement road built by the State in their town. In an official communication to the supervisors they called attention to the faulty construction and the supervisors in turn have instructed their committee on repairs and supplies to look into the matter at once. The Smithtown officials adopted a resolution to the effect that the so-called cement construction did not meet with their approval and that steps should be taken to prevent the similar construction of any more such roads in this county.

Government Building Highway to National Boundary

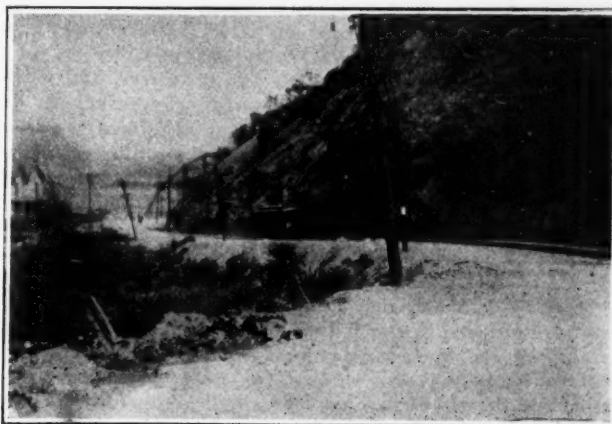
Montreal, P. Q.—The Quebec provincial government expects that the King Edward highway from Longueuil to the Intercolonial boundary at Rouses Point will be completed before October. On the other side of Rouses Point the route to New York contains some of the finest roadway in America. It is also the intention of the provincial government to rebuild the Chambly road, which is popular because of its scenic advantages. It will be known as the International Highway. The King Edward highway will be about 40 miles in length and will cost about \$250,000, the estimate being \$6,000 a mile. The government is doing the work itself, but the International will probably be let on contract to determine which system is more economical. Twelve separate plants of road-making machinery have been set up along the road, and 80,000 loads of stone have been hauled and distributed in 24 large piles, ready for the crushers. The equipment includes 40 stone wagons, 11 stone crushers, 7 engines and 13 road graders and 7 watering carts. The new road will be macadam all the way, with some of the sections covered with a waterproof coating—a combination of tar and sand. There will be concrete culverts. Construction work has been started on five sections, two at Lacolle, one at St. Philippe, one at Naperville, and one at St. Constant.

Silver Bow County Building Great Highway

Butte, Mont.—Silver Bow county is building one of the finest highways in the State between this city and Anaconda. It is a 28-foot roadway, graded, drained and crowned according to the most improved methods, and when completed will be maintained by the patrol system. Delegates to the Good Roads Congress at Anaconda saw the road-making crew making an ideal dirt road at the rate of from one-half mile to one mile a day and marveled. Then they rode in autos over the new road from the Deer Lodge county line for several miles east, viewing the creosoted culverts and similar features of construction. Work on the new road is being done under the personal supervision of Oscar Rohn, of the automobile club. One 45-horsepower traction engine of the Austin type, two graders, two adjustable road drags, a scarifier and a 45-horsepower road roller are being used in the work. Two experienced engineers, two experienced graders and a foreman are employed. Hugh Smith is foreman of the crew. Either Mr. Rohn or County Surveyor Frank Corr are on the job all the time. The road construction was started at Rocker on June 5 and will soon be completed to the boundary line, save for rolling, the roller having but recently arrived. The drainage system is a thorough one. Cross drains are installed at intervals of every few hundred feet. The road is costing between \$100 and \$300 per mile, and although it is being built on contract, the county will get the road for actual cost. After the Anaconda road is completed the crew will start work on a road from the Butte city limits to the foot of the Eighteen-Mile hill.

Fill in Valley to Prevent Hill Sliding

Pittsburgh, Pa.—A project which has as its object the filling in of a deep valley to prevent the sliding of an adjoining hill, and which will make necessary the building of a narrow-gauge railroad, the use of several small locomotives and a huge steam shovel and the employment of a small army of men, has been started by the Samuel S. Brown estate along the old Brown road, which runs from the upper end of Hazelwood avenue to the Brown bridge, over the Monongahela River to Homestead. The project



Courtesy the Pittsburgh Dispatch.

FOOT OF HILL WHERE SLIDING OF ROAD OCCURS.

has as side issues the building of a road 1,700 feet long and the preparation of a plan of building lots. The picture shows trolley line at base of hill. About 100,000 cubic feet of earth is to be excavated from the side of this hill on the right-hand side of the street car tracks going down grade, and dumped into the valley on the other side of the tracks. For years—in fact, from the time the Brown road was built and the street car tracks laid—the estate has been forced to spend thousands of dollars to prevent the sliding of the road into the valley, where at one time there was a popular picnic grounds. A number of springs are located under the hill, and these make the clay slip from the rocks which serve as the foundation. As this road is the only outlet from the East End and Squirrel Hill section to Homestead, it is necessary to keep it in good condition. The contract for this work was given to Booth & Flinn, Ltd. An excavation has been made in the side of the hill at a point about three-quarters of a mile above the bridge, and the shovel has been moved to that place. The new road which will be made where the dirt is taken from the side of the hill will lead along the side of the hill to Browns Place, a settlement of 35 or 40 houses perched upon the brow of the hill above Browns bridge. Approximately 1,100 feet of the valley will be filled in. At the point where the work has been started the valley is about 20 feet deep but further down it deepens to about 60 feet. Both slopes of the valley are heavily wooded.

Cloudburst Destroys Several Miles of Streets

Alton, Ill.—Four persons were drowned at Alton, Ill., July 14, by a cloudburst which destroyed two miles of streets, wrecked six buildings and the gas plant of the Alton Gas & Electric Company, with a total property loss of \$250,000. The cloudburst followed a spectacular storm which lasted all night. A heavy cloud passed over Alton three times, flooding streets and cellars each time. The third time rain fell in torrents, sending a wall of water nine feet deep through the principal business and residence streets. Sewers broke, washing away the foundations of six residences, which dropped into the cellars. A culvert under the gas plant of the Alton Gas & Electric Company was washed out and the entire plant sank several yards.

Close Up Town to Build Road

Ravenden Springs, Ark.—Citizens of Ravenden Springs and surrounding country, will build a pike road from Ravenden Springs to Ravenden, a station on the Frisco, a distance of nine miles without one cent of cost to the county. Final arrangements are being perfected in order that active work on the construction of the proposed public highway may be begun July 22. The building of the road will be under the supervision of an experienced road engineer and everything done will be substantial and permanent. All the stores and offices will be closed eight hours each day that the citizens are working, and the business men, as well as preachers, will join in the work which will be gratuitous and which will continue for about a week.

Oil for All the State Roads

Norwich, Conn.—Oil enough to complete the oiling of all the State roads in the county has now been ordered and is on the way, a total of fourteen cars, 10,000 gallons to a car, having been ordered by Deputy Road Inspector John Donovan. It will be put on as fast as it arrives, and when all the 140,000 gallons has been spread the travel on all the State roads in the county will be as near dustless as it is possible to make it. Out of this total of fourteen cars, three are to be for Montville, using two on the turnpike and one on the side road to Palmertown. Colchester roads under State care will take one car of oil, North Stonington, Groton, Stonington, Baltic and Yantic, one each. The car ordered for Yantic will be used partly on the State road at Norwich Town and the rest on the Franklin road from the Norwich line northward. Two cars will be required for the roads in Old Lyme. The latest cars for Deputy Inspector Donovan to hear from are those coming for the roads in East Lyme and Waterford. There are to be two cars for East Lyme and one for Waterford. So far this season the oiling done has all been handled by two wagons and one pump, but the demand for oil on the roads has made it impossible to get along with this small equipment and the deputy inspector has bought two new wagons and a new pump. With these four wagons to use in spreading the oil, he feels that he can take care of it as fast as it arrives. The continued dry spell is having its effect upon road building, as in some places it is impossible to get water. Without water it is no use to try to make good road construction and this is retarding the work on the Jewett City road. Three miles of this has been repaired, but the work is practically at a standstill now because of the impossibility of getting water, the deputy inspector says.

Road Work Done by Convicts

Jefferson City, Mo.—After a trial of three weeks with a gang of convicts employed upon the public highways of this county the experiment is announced to be a decided success. None of the convicts refused to work, none of them attempted to escape and all have been doing most satisfactory work. Governor Hadley believes that the improvement of public highways will enable the counties to work local prisoners on the roads. Convicts greatly prefer the outside work. It is more healthful. In addition, there is the inducement of shortening their service. There are now about 2,300 men in the penitentiary. Under the new law 300 convicts can be taken every year and employed upon the public highways under direction of the various counties. There are now more than 1,700 convicts working under the contract system. The State receives 70 cents a day for the labor of each of these convicts. By the close of the present year nearly all of the old contracts will have expired and will not be renewed. There will be a pretty heavy cost entailed upon the State when the last contractor is out of the prison—somewhere in the neighborhood of \$300,000. The State can have no direct source of income from the labor of the convicts when the contract system ceases to exist. The counties which may employ convicts upon the public highways will pay nothing for their labor except food and shelter. The recompense to the State will come in the shape of improved highways. Missouri has never tried the plan of working prisoners on the public highways before.

Maintenance of State Roads Will Be Big Task

Harrisburg, Pa.—Systematic maintenance of the 8,000 miles of road embraced in the 296 main highway routes of Pennsylvania's comprehensive plan for improvement of highways has been inaugurated by the State highway department, and the work is expected to show decided results before the end of summer. Maintenance of the roads taken over by the commonwealth is imposed upon the State by the Sproul main highway act of 1911, and supervision of repair and upkeep is vested in superintendents having charge of one or more counties each. This repair work is probably one of the largest tasks undertaken by any State in road improvement, and while the amount accomplished this year will be limited, owing to the comparatively small portion of funds at hand for the purpose, the organization of operations will be a long step in the line of progress. The State has been divided into districts, comprising from four to eight counties, and these districts have been subdivided, the smaller divisions being in charge of the road superintendents, who are responsible to the engineers in charge of the larger areas. The superintendents are organizing their forces for repairs, and roads which have been neglected or damaged will be put into shape for good traveling, especially those in the vicinity of market towns, so that farmers may be given the advantage of better roads and town residents obtain farm produce more easily. Gradually the work is to be extended as funds are made available by the legislature for repair of all State roads, which will naturally result in a stimulus to local improvement on township highways, many of which connect with main highways. Repairs will consist of removal of humps, dragging, patching, underdraining and ditching. Roads which have been built by the State since the organization of the highway department in 1903 will be put into good condition wherever they have been allowed to run down. Special care will be taken to improve the drainage.

SEWERAGE AND SANITATION

Extermination of Rats in Galveston

Galveston, Tex.—A campaign to exterminate rats, regarded as one of the chief factors in the spread of the bubonic plague, has been begun here. Three cents a head is being offered for the rodents. They are being brought in by the scores. The campaign was decided on after a conference of government, State and city authorities. Regulations governing the arrival of all ships are being rigidly enforced.

Rapid Sewer Construction

Fulton, N. Y.—Debarber & Massaro have practically completed their \$4,945.73 contract for the construction of new sewers in Fulton. The contract was let on May 6 and work was started two days later. The contractors have taken just ten weeks to complete the contract and during that time have constructed 5,493 feet. According to the board of public works the work has been satisfactory.

State Health Board Says to Boil Water

Trenton, N. J.—The boiling of all drinking water as a safeguard against typhoid fever is being particularly urged upon the public at this time by the State Board of Health. Recent examinations, made in the State laboratory, of public water supplies where there is no filtration or treatment of such waters, show that in many instances polluting materials are present. With the diminishing flow in surface streams during the dry season this condition is likely to occur, and with each heavy rain vegetables and animal matter is washed into such streams. The bacteriological examination of all public potable water of the State is systematically carried on by the State board, and where there is indication of increasing pollution of a public water supply notice is sent to the water company. It is the view of the State board that whenever increasing pollution of a public water supply is apparent, the only safe method to be adopted is to thoroughly boil all water before using it for potable purposes.

Health Department Asks Citizens to Kill Rodents

Pensacola, Fla.—Three cents each, dead or alive, regardless of size, is the price offered by the city of Pensacola for rats, according to the resolution adopted by the city council, an appropriation of \$250 having been made for this purpose. The rats are to be delivered to the office of Dr. F. A. Brink, State bacteriologist, in the city hall, and the offer goes into effect immediately. The action referred to was taken by the council after hearing from Dr. S. R. Mallory Kennedy, the local representative of the United States Marine Hospital service, who addressed the council on the necessity of taking precautions against bubonic plague entering this port. Dr. Kennedy said that the surest way of preventing this dread disease is to exterminate the rats, and said that he had wired and asked Dr. Porter, president of the State Board of Health, if the State would share the expense of a campaign for rat extermination in Pensacola. He said Dr. Porter had written him that the bacteriological station in this city would lend assistance in the campaign of rat extermination.

New Sewer Is Defective

Atlanta, Ga.—That the new Capitol avenue trunk sewer, built with bond issue money at a cost of more than \$80,000, overflows every time there is a heavy rain, thereby failing to serve the purpose for which it was intended—namely, to relieve the burden on the other trunk sewer in that drainage area—was stated to the sewer committee of council by Dr. R. F. Ingram and other citizens of the South Side. W. A. Hansell, the engineer in charge of sewers, and acting chief of construction in Captain Clayton's absence, explained that the sewer's failure to perform satisfactorily was caused by intersecting with another sewer at several points and that the curvatures in these intersections would have to be lengthened. He said \$100,000 had been allowed in the bond issue for the Capitol avenue sewer, and that nearly \$20,000 had been saved. This saving would more than cover the lengthening of the curvatures. Dan Carey, manager of the city park department, told the committee that storm water from an area as large if not larger, than Grant park, is dumped into the park, washing away roads and sidewalks as fast as they are built and doing serious damage in many other ways. He also reported that the trunk sewer through the park overflows when a rain comes, covering large areas in the park with foul sewage matter. He appealed to the committee to correct these conditions.

Hope to End Pollution of Fletcher Lake

Trenton, N. J.—As the result of a conference arranged for between Secretary Bruce S. Keator, of the State Board of Health, and the authorities of Neptune Township, Monmouth county, it is anticipated that some plan will be devised to put an end to the pollution of Fletcher lake by the sewage from the township. If an amicable adjustment cannot be reached between the Ocean Grove Campmeeting Association and the township authorities, who have been at odds over the sewage question for a long time, the State board may invoke its extraordinary powers to abate the nuisance for the public good. As explained, the condition which resulted in the Ocean Grove association cutting off the township's sewage outlet is the outcome of procrastination on the part of the township committee in installing a sewage disposal system for which plans have already been prepared and approved. The township had a contract with the association by which it was allowed to use the Ocean Grove mains. The contract was subject to revocation by the association should the sewage increase to an amount exceeding the capacity of the mains. When this condition arose the association revoked the contract and the township appealed to the courts without success. In the meantime the State board kept trying to force the township to install its own system, but without success. When the situation threatened to become acute the State board decided as a temporary makeshift to permit the township to discharge its excess sewage in Fletcher lake after it had been rendered harmless by chemicals. This permission, however, did not contemplate the pumping of raw sewage into the lake as has been done since Ocean Grove cut off the township's use of its mains.

Over Half Mile Sewer Laid by City Employees

Knoxville, Tenn.—At a meeting of the board of commissioners of Knoxville the report of John W. Flenniken, commissioner of streets and public improvements, showed that there had been constructed during the past month more than one-half mile of 8-inch sanitary sewer at a cost of \$1,215. This was done by the sewer crew of the city under the direction of the commissioner of streets and public improvements.

Adopt Measure to Prevent Spread of Glanders

St. Augustine, Fla.—President Underwood, of the St. Augustine Board of Health, has appeared before council and reported that glanders are prevalent among the horses of the city and urges certain sanitary measures to stamp out the disease. Upon motion the mayor will be instructed to have the water supply shut off from all public drinking fountains temporarily as a precautionary measure, as it is believed that the disease is spread from horses drinking from these public fountains.

Health Commissioner Warns Against Typhoid

St. Louis, Mo.—That an epidemic of typhoid fever, or some other disease equally dangerous, may follow the flooding of cellars in various sections of St. Louis by back water from the sewers, as the result of a recent heavy rain storm, is feared by city health officials, and steps are now being taken to wage war against any invasion of disease. Dr. G. A. Jordan, assistant health commissioner, said the flooding of the cellars with the sewer water was a grave menace to the health of the city. The water, he says, teems with germs of every description, including typhoid. Practically every section of the city suffered from the back water, according to Dr. Jordan. To prevent disease, owners of houses where cellars have been flooded should drain the water out immediately and give the cellar a thorough cleansing, he says. Dr. Jordan will send men to fumigate the cellars on request of the owners. In no instance, however, will the department fumigate unless the cellar has been thoroughly cleaned. A squad has been assigned to the fumigating work. Sewer Commissioner C. A. Moreno said he had received 2,000 complaints due to the heavy rain. Moreno said he understood the city was not liable for damages accruing from the flood. Should a special session of the municipal assembly be called this summer, both Mayor Kreismann and Moreno expressed the opinion proposed sewer bills for the relief of congested districts should be taken up. "I hardly think it would be necessary to call a special session just for that purpose," said the mayor.

Cordials Made of Wood Alcohol Destroyed

Trenton, N. J.—More than 300 gallons of cordials and liqueurs have been destroyed by the State Board of Health and as the result of the investigation conducted by the Division of Foods and Drugs ten suits are to be instituted against liquor dealers in the State. The investigation, which has just been completed, is considered by the State Department as one of the most important in its history. The "cordials" were sold originally by the Lucca Produce Wine Company, of New York, and they are said to have contained from 5 to 20 per cent. wood alcohol. All of the suits are against dealers in Newark and Jersey City, but it is thought that some of the impure stuff has been circulated throughout the State. The matter was brought to the attention of the State board by the United States Department of Agriculture at New York. The Italian consul of that city brought five Italians before that department and two of the victims had become stone blind as a result of drinking the cordials. It was learned that New Jersey was a big market for the goods and the investigation by Dr. R. B. Fitz-Randolph, chief of the Department of Foods and Drugs, and his assistant, William G. Tice, followed. The liqueurs were drained into the sewer, as they were found, and the cases will be prosecuted immediately. Besides the wood alcohol the other ingredients were essential oils, sugar, artificial color and artificial flavor. The wood alcohol is a deadly poison and blindness is a frequent result. The cordials are consumed principally by Italians and often by women and children at wedding celebrations.

The Care and Maintenance of Denver's Sewers

Denver, Col.—The care of the sewers of the city is a constantly growing responsibility. The superintendent of sewer flushing is in immediate charge of the 482 miles of completed sewers, of which 362 miles are for sanitary purposes, 116 miles for storm drainage, and nearly four miles for combination uses. Their value is \$5,745,463.70. The working force of this division of the city's business consists of the following: Three two-horse teams and drivers with flushing tank wagons; 3 flushers with wagons; 12 flushers and cleaners; 3 laborers, and 1 expressman, occasionally employed. The daily flushing and cleaning by this force being supplemented by 458 automatic flushers, constructed in place in the various outlying portions of the city. The disbursements for the year, of the sewer flushing division, amount to \$24,167.72, consisting of \$21,561.92 for labor, and the sum of \$2,605.80 for materials, supplies and other expenses. The cost of maintenance of the horse watering troughs and drinking fountains is included in the foregoing figures. There are in use at this time forty-two of the former and twenty-three of the latter.

Heavy Rain Shows Drainage Canal Will Work

Atlantic City, N. J.—The first real test of the utility of the new drainage canal, which is now nearly completed, came with a heavy rainstorm last week, and according to reports from various parts of the city where the laterals have been connected with the great concrete duct, it seems to be doing its work as well as any flat, or practically flat, surface drainage system can do. From Pennsylvania avenue uptown to the outlet of the drainage canal into Gardner's Basin at Rhode Island avenue, and from the section of the city below Kentucky avenue to the outlet at Georgia avenue the rainfall which collected on Atlantic, Arctic and Baltic avenues was in the main carried off promptly and the streets were passable within a few minutes after the rainfall and collection of water was at its height. The surface drainage runs over past Arctic avenue to a few feet this side of Baltic, where there are small arched openings into the laterals. Some of these lateral openings, at the testing which the rainstorm gave, became partly choked with debris, that had floated in from the streets and to some extent retarded the flow of water. These openings are not protected by gratings, and it was said by a civil engineer, who noted the progress of the whole drainage work, that these openings are not large enough and that the cesspools beneath would get filled with debris. This choking up can be obviated, the engineer stated, by cleaning the streets, which on many sections of the north side are in a rough state and uncleaned and a great quantity of litter, which does not properly belong in the streets has been allowed to remain because of the unfinished condition of Baltic avenue and the canal and the building of the laterals. On August 1 the entire drainage canal will be complete.

WATER SUPPLY

Mayor Toils in Overalls

Herrin, Ill.—Work on the \$63,000 water works plant has begun and Mayor Anderson put on overalls and braved the sun's 90 degree heat and helped lay the water mains. The plant is to be owned by the city.

Water Works Engine Starts

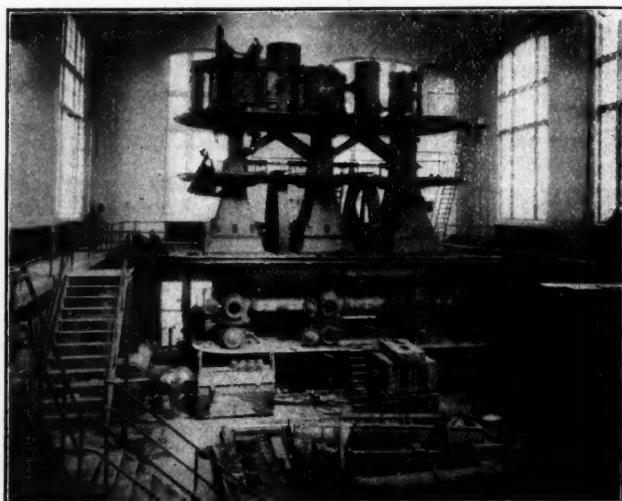
Urbana, O.—The new engine at the water works was started in the presence of Mayor Green, Service Director McCarthy, Superintendent Burnham and Councilmen Holding, Schlickman, Landis and Scheif. The engine started pumping water as soon as the expert engineer, Phil Dammel, turned the lever, and worked in a manner pleasing to the officials. Some adjustments will have to be made before the engine is ready for steady running and it will require several days to make these changes, during which time the old engine will be used to supply the city with water. As soon as the representative, Mr. Dammel, of the Laidlow-Dunn-Gordon Co., from whom the engine was purchased, gets the engine regulated it will be accepted by the city.

Water Main Blows Up

Scranton, Pa.—The 36-inch water main leading from No. 7 dam of the Scranton Gas & Water Co. and supplying the city of Scranton was put out of commission at midnight one evening last week. W. W. Scranton, president of the water company, alleges that the water main was blown up by union workmen, now on strike. The break, it is reported, occurred near the Spencer breaker. Seventy million gallons of water poured into the Roaring Brook.

Mission Street Station Nearing Completion

Pittsburgh, Pa.—In about one month, it is expected, the new Mission street pumping station, built by the city to supply water for southside citizens and residents of the



Courtesy the Pittsburgh Dispatch.

BOILER ROOM OF NEW MISSION STREET STATION.

hilltops, will be ready to be officially opened. Occupying an unusually handsome building, on the side of the hill above the upper section of the southside, on Mission street, and equipped with thoroughly modern machinery for handling the water supply, this is one of the most complete adjuncts of the city water system. Superintendent Finley, of the bureau of water, said that the station was practically complete, with the exception of a few final details. In the accompanying illustration is shown one of the big pumps and a scene in the boiler room. The pump shown in the photograph will handle 7,000,000 gallons of water every 24 hours. Provision has been made for four of these of similar capacity.

Better Water Pressure

Lynn, Mass.—When the city of Lynn completes the work of laying a new 16-inch water main on Boston street, to connect with the 12-inch main recently laid by the local water department from Franklin square in East Saugus up Lincoln avenue to Ballard street, the water pressure in Cliftondale will be greatly increased. The water pressure in the Cliftondale section of the town had been inadequate for a long time and the increased pressure will be welcomed, especially by those people who sprinkle their lawn and gardens every evening.

Water Famine Menaces East Syracuse Village

East Syracuse, N. Y.—"East Syracuse is threatened with a water famine, and unless the citizens are careful in the use of water the village will be dry," announced President Fred M. Schepp of the board of water commissioners, after an inspection of the water works. Village President M. J. Spillane and Superintendent I. W. Allen, of the public works department, accompanied him. The extreme hot and dry weather has caused a decrease in the supply which the recent rains have done little to replenish. Extreme care in the usage of water in the village and water motor washing machines, as well as lawn hose, will come under the ban and cannot be used until a raise of water in the Orville reservoir and Jamesville feeders is shown. It is a question whether the village authorities will allow the streets to be sprinkled or not on account of the scarcity. A special meeting of the water commissioners will be held to take action on the question.

Sterilizing Woodbury Water

Woodbury, N. J.—With the temporary installation of a hypochlorite plant at the water works, it is feared that visions of a new artesian water plant will soon fade. At the same time, according to several councilmen, this is the best step that could be taken at this time. Workmen have been busy placing the machinery, but the treated water will probably not reach the consumers for several days. It is claimed that the reservoir contains a day's supply, while the pipes hold another.

Water Stations Worth Million

Saginaw, Mich.—Superintendent R. F. Johnson puts the valuation of the city water works plants at \$1,000,000, divided \$674,000 east and \$326,000 west. This is a revaluation of the plants, as informally directed by the water board, June 22, and is entered in a new journal and ledger, opened July 1, 1912. In July, 1911, the valuation was fixed at \$920,000, so that the revaluation shows a substantial increase of \$80,000. As a matter of fact, there was added to construction cost, during the fiscal year, 1911-1912, \$89,801.72, the odd \$9,000 being charged off to depreciation, or in exact figures, \$7,441.39 east and \$2,360.33 west.

Increase Shown in Water Works

Youngstown, O.—The report made by State Examiner C. S. Metcalf regarding the condition of the city water works department shows it to be in a most excellent condition and with a surplus of \$53,717.43 for the year 1911. The report shows that in every respect the conditions are up to the requirements of the State inspection bureau. The manner in which the office is conducted is commended and no criticism is offered. The assets of the department are \$1,927,975.97, while the bonded indebtedness is \$393,000. The charge against the department for the private extensions is the same as last year, \$20,186.56. The bonded indebtedness in the year has been reduced \$40,000. The assets in excess of the liabilities are \$1,484,789.41. The revenues during the year were \$187,961.74, while the estimated free service for the year, including schools, public buildings and hospitals, was \$57,250. The loss from taxes 41 per cent. on 40 per cent. of \$1,927,275.97, providing the institution was owned privately is \$31,618.81, which shows a net increase of \$79,348.62. The city has 1,384 fire hydrants. There are 9,800 consumers on a flat rate and 2,500 consumers on a metered system. There are five horse troughs run free; one fountain, 22 schools, a public library, three hospitals and the Old Ladies' Home.

Mesa Water Now Exclusively Used

El Paso, Tex.—"The city water works on the mesa," says Mayor Kelly, "is now pumping 1,000,000 gallons more water daily than the city needs, and to avoid overflowing the reservoirs the pumps and compressors will not for the present be worked to their full capacity, for the city can be supplied without working them to the limit. The Watts wells have been closed down entirely, to stay closed, except in case of emergency, such as a break-down of the mesa plant, trunk mains or reservoirs, or a great conflagration. On the mesa there are 17 wells in commission, but there are six more needing only to be connected up in order to make them available. With the present machinery and the 23 wells we are safe with abundant mesa water for all purposes for the next two years."

Water Famine Is Narrowly Averted

Woodland, Cal.—The steam plant at the city water works was disabled early one morning last week and over two hours elapsed before it could be repaired. In the meantime 120,000 gallons in the big tanks were exhausted, and a water famine was seriously threatened. Trustee Mitchell made a hurried trip over the city, shutting off the water of the early lawn sprinklers, who paid no attention to the signal blast notifying them that the water plant was out of commission. Fortunately the electric motor had arrived by express the night before and was installed after the breakdown of the pumps. The new West End plant is operating satisfactorily and pumping a fine stream into the mains, so that there is a promise of an abundant supply of water. But for the reserve of 25,000 gallons in the steel tank the people of Woodland would have been without water for a number of hours.

STREET LIGHTING AND POWER**City Hall Lights Costly**

Chicago, Ill.—Commissioner of Public Works McGarr, and others about the city hall have made the discovery that it costs more than \$1,900 a month to furnish the city hall with electricity. The expense seems heavy to them, but they say they see no way of reducing it, for the use of electrical current seems to warrant that expenditure. During the month of May light current cost \$1,003 and power current \$930. There are about 15,000 lights in the building and the current for power is about 1,200 h.p.

New Rules for Electric Signs

Philadelphia, Pa.—Chief Pike, of the electrical bureau, has issued a new set of regulations governing the placing of electric signs. Permits will not be granted in future for the erection of signs that will project more than four feet three inches from the building line. The bottom of the signs must be at a height from the sidewalk equal to the height of the first story ceiling, or at least a height of 12 feet. Also, electric signs to receive permits from the electrical bureau must be electric signs in fact and not in name only. In the past one lone incandescent lamp made an electric sign. Ordinary signs are licensed by the police department. Under old regulations electric signs could project within three feet of the curb. One-half of the electric lights on the plaza of city hall will be cut off after one a. m. by order of Chief Pike. This will mean a saving of \$1,500 a year to the city, he figures. New "blazing arc" lamps are being tested by the chief on the top of the city hall tower.

Expert Suggests Changes in City Lighting Terms

Lynn, Mass.—Professor William L. Puffer, of Boston, an expert engaged by the municipal council to make a study of the local lighting situation, and examine the proposed five-year contract offered to the city of Lynn by the Gas & Electric Co., had a two-hours conference with four of the commissioners in the mayor's office last week, during the course of which some very interesting views were exchanged upon the subject. Professor Puffer has recommended some radical changes in the form of contract which will be discussed with representatives of the Gas & Electric Co. He is said to favor a five-year contract, but believes in surrounding an agreement covering that period with certain conditions that will further promote the interests of the city. Prior to meeting the commissioners, he visited the river works of the General Electric Co. and inspected the luminous arc, which has been recommended for the proposed "Great White Way." Thus far no written report has been submitted by the expert, who has only discussed different features of the contract in a conversational way. It is understood, however, that a formal statement will be made by him at a later date.

Exhibit New Style of Street Lamps

Newport News, Va.—Six of the new ornamental luminous arc lamps, which have been placed along Washington avenue, between Twenty-eighth and Thirty-first streets, two to a block, by the Citizens' Railway, Light & Power Company for the purpose of demonstrating a new style of street lighting, were burned for the first time one evening last week. The lamps are contained on ornamental brackets and are of a decidedly artistic design, the general idea being that of a Greek torch. Not only in design, but in illuminating efficiency, the lamps are said to be far ahead of anything that has been placed upon the market. The development of street lighting during the last few years has been marked. Merchants and civic organizations have come to the belief that aside from simply lighting the streets so that pedestrians won't stumble over obstructions, street illumination has other functions to fulfil, the most important of which is to attract trade. It is claimed for these lamps by their manufacturers, and the experience of the cities where they have been used seems to bear out the contention, that they are not alone ornamental to the street in daylight and at night, but in the quality and quantity of their illumination they excel any other lamp on the market.

FIRE AND POLICE

Brownsville Police Now Uniformed

Brownsville, Tex.—One of the most notable improvements to be inaugurated by the new city administration is in the clothing of the city police in uniforms of blue with light gray hats. The policemen in their new suits present a pleasing appearance indeed, and are the recipients of many complimentary remarks by the townspeople.

May Have Women for Police Department

San Francisco, Cal.—A movement has been started before a meeting of the board of police commissioners to have twenty-one women appointed police officers in San Francisco. Representatives of more than thirty women's organizations appeared before the commission and urged the appointment of these women police officers. Commissioner O'Grady explained that the women would have to go before the supervisors and obtain an appropriation and also an authorization for the appointment of women officers. All of the commissioners, Cook, Woods, O'Grady and Spirt, expressed themselves as being in sympathy with the movement.

Plan Motorboat Fleet for Police

Philadelphia, Pa.—Plans are being considered by Director of Public Safety Porter and Superintendent of Police Taylor for organizing a fleet of police motorboats to patrol the Delaware and the Schuylkill rivers day and night, ready for instant service in case of drownings, shipping accidents or depredations of river thieves. To form this proposed flotilla the police authorities will soon cause an ordinance to be presented to councils providing for an appropriation for five first-class motorboats. At present the city owns, besides the several police tugboats, one small motorboat, the Margaret, which has been found very useful for service that the larger tugs are not so well adapted to perform. Recently Motorcycle Policeman Ulrich tendered the use of his own motorboat, the Jane, to the city authorities, which loan has been accepted. For some time the police officials have wished to provide a number of power-boats for the river service, but there was no money available to purchase such craft. Hearing of this, Ulrich offered to lend his boat to the city for police work, and she has since been patrolling the upper part of the Delaware River and has performed meritorious service on frequent occasions. The Jane is under command of her owner, Policeman Ulrich, who is assisted by Motorcycle Policeman James B. Kelly. When the city has procured the five new motorboats the Jane probably will be retired from police service, and the new squadron will be composed of six craft. Under the arrangements proposed there will be three beats; namely, the upper part of the Delaware, between Market street and Torresdale; the lower part of the river, between Market street and Point Breeze, and the Schuylkill River, between Point Breeze and the Fairmount Dam. There will be both a day and a night patrol on each of the three beats. Four of the craft will be assigned to the Delaware River and the two others to the Schuylkill. The purpose of the motorboat flotilla is not unlike that of Director Porter's proposed "flying squadron" for the fire department, which consists of motor fire apparatus that can be dispatched instantly and speedily in cases of emergency, thereby facilitating the work of the heavier engines that follow, or it may be used when the heavier apparatus is unnecessary. Similarly, the motorboats can proceed instantly to any part of their respective beats at a moment's notice, and can undertake such work in which the larger police tug boats are not needed. Moreover, the smaller boats have the advantage of being able to enter water that is too shallow for the larger craft, and will be useful for work that these cannot approach. The small boats probably will be very useful in drowning cases, since the high speed at which they can travel will help them to reach the scene of distress with little delay. Another important function of the boats will be the patrolling along the shores in search of harbor thieves. Each boat will be equipped with fire extinguishers, fire axes, hose, stretchers, medicine chests and life preservers.

Police to Enforce New Traffic Ordinance

Fulton, N. Y.—Chief of Police William Ross will now enforce the new traffic ordinance. It is expected more than the usual number of patrolmen will be stationed on the streets where travel is the heaviest. It is the opinion of many drivers and owners of vehicles that the enforcement of the provisions of the new ordinance depends upon how vigorous a campaign of education is carried on by those interested in securing the passage of the act. The attention of one motorist was called to the provisions as published in the pink pamphlet, issued by the Fulton Automobile Club in its endeavors to assist the city authorities in the enforcement of the new rules. This motorist approved of the provisions. According to the police department the greatest offenses against road courtesy arises from those who drive horses. It is not the automobile driver, say the police, who drives north on the west side of the street or cuts diagonally across the street, endangering traffic; it's the farmer who disregards road rules.

New Fire Alarm System

North Pelham, N. Y.—A sign has been placed in the headquarters of the North Pelham Fire Department reading: "The new alarm system is now in service. Companies must answer all alarms." The new system is one of the most modern and fully equipped in New York State. It is of the diaform whistle style manufactured by the Gamewell Fire Alarm Telegraph Co., of New York. There is at all times 100 pounds pressure upon the whistle which is automatically so kept by two 5-horsepower motors. A large motor and generator keeps the batteries charged at all times. The system is the two circuit type which will indicate any interference along the lines and insure accurate transmission. The lines which are connected with 13 boxes are equipped with lightning arresters which will prevent the mechanism from being effected in event the wires are struck by lightning. A whole room has been set aside in the rear of the headquarters for the apparatus. The whistle is tested every Saturday at 12 o'clock noon from different alarm boxes. There are no transmission calls in the system, each box from which an alarm is sent is registered by a tap being perforated automatically. To avoid a repetition of calls for the same fire from different boxes, each box is equipped with a small bell which can be heard by anyone making an effort to send in the second alarm, this prevents any complications that may arise from such an act. The system was installed at the cost of about \$4,000. The board of fire commissioners under whom the system was installed are Frank Chaloux, president; Charles W. Foster, secretary; Jacob Heisser, treasurer; A. C. McGuire, M.D., E. F. Giese and Daniel L. O'Leary.

Abstract of Title Develops Interesting Historical Incidents

Dallas, Tex.—Abstracts of title were filed with the city of Dallas by Lawrence Miller for Hann & Kendall and for Murphy & Bolanz for the new fire station site on Young street. The abstracts begin from the time President Sam Houston, of the Republic of Texas, made a grant of the land to John Grigsby because of service to the Republic. It is recited that the land is a part of Nacogdoches County. The grant is signed at Austin on Jan. 28, 1842, "the year of the independence of Texas, the sixth." Thomas M. Ward, as Controller of the General Land Office, is a signer. Following abstracts are of the divisions of the land and have little to do with transfers. The first warranty deed was on Oct. 3, 1849, when Dallas County was first mentioned, and 171 acres, including the present site, sold for \$1 per acre. This continued to be a selling price for several subdivisions until March 31, 1851, when the first sales were made at an advance. Then John A. Leonard was purchaser of a small part at \$500. There were many transactions before the land in question got into the hands of the Bartholow estate for less than \$5,000. The sale to the city is at \$22,000. There is a six-room cottage in good repair on this site and this the city expects to sell to someone who will move it away. Harry A. Overbeck has been designated to prepare the plans for the new station to cover fifty feet by more than 100 in depth along an alley. It is expected that this downtown station, near the Browder street extension area of the city, will be ornate enough for the business section.

AUTO APPARATUS NOTES

Schenectady, N. Y., and Salina, Kan., Fire Departments Now Horseless—Pittsburgh's Department to Be Made So—Montclair Tests Combination Wagon

Schenectady, N. Y.—The final piece of motor apparatus at the Central station has gone into commission. The chief's rig was the first motor-driven piece of apparatus and did away with one horse. This was followed by the truck being transferred to a motor-driven apparatus, doing away with three more horses. Last, the combination wagon which has just gone into commission, doing away with two more horses, makes this station completely "horseless." All the motor apparatus is of one make, the Alco, and the working of the two main pieces is being watched closely by other cities which are contemplating putting in motor driven vehicles.

Pittsburgh, Pa.—The city of Pittsburgh will spend more than \$700,000 next year in putting the fire department on a horseless basis. Director of Public Safety John M. Morin has asked for an item covering this amount to be inserted in the \$5,000,000 bond issue which will be voted on by the citizens next November. Seven new automobile patrol wagons are now being delivered for the police department, and it is desired to obtain five more. The bond issue is popular and it is practically assured that the automobile fire department item will be authorized.

Utica, N. Y.—Commissioner of Public Safety Church, in recommending the purchase of a motor fire apparatus, spoke of the fact that Herkimer has one and that it proved efficient while being tested in this city. He said that such an apparatus installed in No. 1 engine house would cover the Eleventh Ward for some time to come. In speaking of the need of a combination motor ambulance and police patrol, Commissioner Church said: "At the present time we have three policemen who act as patrol and ambulance drivers at a total salary of \$255 a month. The keep of three horses amounts to an additional \$67.50 a month, and the repairs on our two wagons from January 1 to July 1 have cost \$194.62. This expense totals to \$2,129.62 for the past six months, and I have left two wornout wagons and three horses that will have to be replaced at once." He read a letter from the chief of police at Binghamton in regard to an auto ambulance-patrol recently bought by that city. The machine cost \$3,000 and the chief wrote that it gives splendid service.

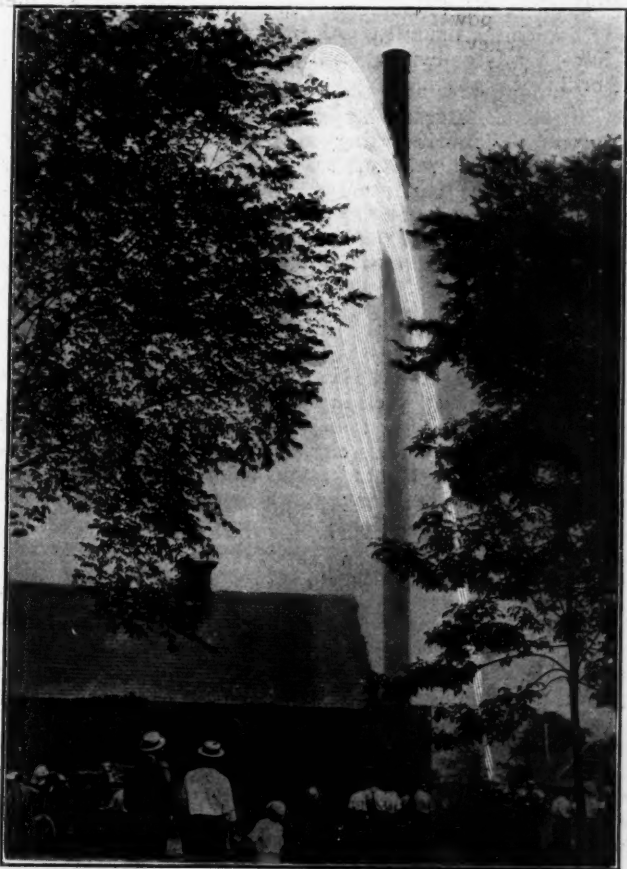
Schenectady, N. Y.—W. W. Bridgeford, chief of the Albany fire department, accompanied by Wallingford Hastings, E. V. Kenney and D. McArdle, of Albany, called on Chief Henry R. Yates one day last week and inspected the new motor apparatus of the Schenectady fire department. A test run was made for the visitors and their ride was made at a speed of about 27 miles an hour. On their return to the central station they said that the apparatus was even beyond their expectations. The matter of being able to get out of the house and started at high speed impressed the visitors greatly. Albany, like many other cities, is in the market for motor apparatus, and the Schenectady apparatus being entirely different from any put out by any other company, the ideas originating with Chief Yates alone, these cities are now closely watching results here before purchasing anything in the motor line.

Montclair, N. J.—A demonstration of the efficiency of the Montclair automobile fire apparatus was given one evening last week. Without saying anything to the men about it, Chief Williams had an alarm rung from a box in Fifth avenue, in front of the Normal School. The box is about three miles from fire headquarters and one mile from the Upper Montclair department. The horse-drawn apparatus from Upper Montclair reached the hydrant only about thirty seconds in advance of the automobile. The three-horse combination chemical and hose wagon has been taken from fire headquarters to the Washington Hose Company (No. 3) quarters.

Salina, Kan.—The city of Salina tested a new Kissel Kar Truck in the service of its fire department the other day with remarkably gratifying results. The alarm answered was recorded at 8:59½ a. m.

"At 9:02 a. m., 150 seconds later, the machine had covered the distance, more than a mile, 100 feet of hose had been laid, the water turned on and a stream was playing on the pavement." Salina now has a complete fire truck equipment, and has discarded every horse in its service.

Montclair, N. J.—The illustration shows Montclair's new fire apparatus pumping water from a well at the pumping station of the Montclair Water Co. The auto pumping engine threw a stream through a 3-inch hose to which a 1½-inch nozzle was attached over the smokestack of the water plant. The stack is 135 feet in height. Among those who witnessed the test were Chief Moore, of Newark; Chief Boughton and Master Mechanic Pearle, of Passaic; Chief Day, of Morristown; Chief Markwith, of East Orange; Chief Matthews, of Orange; J. A. Brown, former chief of Glen Ridge, and about 30 other firemen from other municipalities. The power shown by Montclair's new apparatus was commented upon favorably by all the spectators. The official test of the new apparatus, consisting of a combined pump, hose and chemical machine and a hook and ladder truck, was made under the supervision of former Fire Chief Edward F. Croker, of New York. Several of the town officials, including Mayor Hinck, were spectators. At the exhibition test nearly all of the town officers were present, as well as several hundred persons drawn by curiosity. The exhibition test was said to have surpassed the official one which Mr. Croker declared was satisfactory in every particular. Water was forced through 2,000 feet of hose with sufficient power left in the stream to go over the top of an ordinary four-story building. For the smokestack test 200 feet of hose was the most used. There is only one building in Montclair, an apartment-house, which is more than four stories in height. Following the display at the water works, the apparatus was taken far up the mountainside where the hydrant pressure is low. Attaching the machine to a hydrant the force was increased from 38 pounds to the inch to over 200 pounds to the inch. Those who went to view the tests were also given an exhibit of the ease with which the huge machines could climb the steep mountain grades.



Courtesy Newark Evening News.

TESTING MONTCLAIR'S NEW AUTO FIRE ENGINE.

GOVERNMENT AND FINANCE

Begin Work for "Business System of Government"

Indianapolis, Ind.—The friends of the movement to have the Legislature authorize what is known as "the business system of government" for the cities of Indiana which may desire to adopt that form, will endeavor to extend their organization into every district of Indiana, according to plans adopted at an executive committee meeting at the Commercial Club. A special legislative committee, consisting of one member from each of the Congressional districts, will be named within a short time by the executive committee. Carl S. Wise, of Logansport, was named as chairman of this committee. A publicity committee, composed of H. W. Williams, J. A. Lechler and T. F. Thieme, all of Ft. Wayne, will be in charge of the work of disseminating information concerning this plan of municipal government, and this committee will pay especial attention to giving each member of the Legislature full information concerning the plan before the Legislature convenes. It is likely that a State organizer will be appointed by the executive committee to lay the details of the plans before various organizations in the State, and also to endeavor to form civic organizations which will boost the plan. A finance committee, named to raise money to be used in getting the plan before the public for favorable consideration, consists of W. E. Mossman, Ft. Wayne, chairman; Albert E. Metzger, Indianapolis; O. C. Barth, New Albany, and E. E. Scott, Madison. The charter committee, of which W. E. Stone, president of Purdue University, is chairman, will hold another meeting in this city in December, to go over the plan carefully and pass on the details of the bill to be presented to the Legislature. The executive committee will meet from time to time as the progress of the work creating sentiment in favor of the plan demands such meetings.

Outgoing Government Liberal with Franchises

Sacramento, Cal.—In anticipation of the advent of the new commission government which has just taken over the business of Sacramento, the old city council gave away franchises liberally. Already a movement is on foot to have a referendum upon these ordinances ordered and the ordinances repealed.

Durant Expense Estimate

Durant, Okla.—According to the estimate of the city council of Durant, \$31,963.94 will be required to cover regular expenses connected with operating the city government during the coming year and \$20,824.40 will be required for the sinking, interest and judgment fund. The ordinary expense fund is about equally divided among water, fire, salary, storm sewer warrants, street and bridge and outstanding warrant funds.

Monongahela to Join Third-Class Cities

Monongahela, Pa.—The chamber of commerce held a special meeting last week in the First National Bank hall, at which time the initial step was taken toward making Monongahela a third class city. President Harry C. Landefeld read several communications which he had received from city officials at Franklin, which recently gave up its special charter and adopted the charter of third class, in which they stated that the expense of running that city under the third class city charter was about the same as under the special law but with more efficient results. After the matter had been discussed freely, the president appointed a committee composed of Joseph A. Herron, H. C. Devore, D. E. Davis, M. S. Warne and W. S. Shepler to present to Monongahela councils a resolution requesting it to adopt the charter of a city of the third class. "Resolved, That our honorable and select councils are recommended and requested to take the proper steps and become subject to the provisions of the act of general assembly of 1874, governing cities of the third class, by the passage of the ordinance attached hereto, and made a part of this resolution. The provisions of the ordinance are that Monongahela City, incorporated under the act of assembly approved March 24, 1873, surrender its special charter and adopt a charter of the city of the third class."

Want City on Cash Basis

Paragould, Ark.—City Clerk Ed. I. McKinley has just prepared a statement showing that the total indebtedness of the city of Paragould is \$5,300. The statement was gotten up for the Board of Trade, which organization has started a movement to have the city put on a cash basis.

To Put Finances Under One Department

Orange, N. J.—Three important ordinances relative to the administration of financial affairs in Orange were introduced at the meeting of the common council by Alderman Henry T. Stetson, chairman of the finance committee. By two of the measures the offices of city comptroller and city treasurer are created, and the other measure will rescind an ordinance passed in 1882, creating the office of clerk. These ordinances are in accordance with laws passed at the last session of the legislature on the recommendation of Edward T. Perine, who made a thorough investigation of the financial methods used in Orange. If the measures are adopted all the finances of the city will be merged in one department. Under the present arrangement the water clerk handles the receipts of the water department, but it is now proposed that this duty shall be transferred to the comptroller's department.

State Controller Warns Troy to Retrench

Troy, N. Y.—William Sohmer, State Controller, has written a letter to C. F. Burns, Mayor of Troy, showing the city's outstanding liabilities, exclusive of the current expenses of the year, are estimated to be \$799,665, to meet which there was available on January 1, 1912, in cash, \$47,674 and uncollected taxes amounting to \$163,888. "These facts disclosed in the report of the examiners," says Mr. Sohmer, "must make it evident to yourself and the officials of Troy that an administrative policy for some years past has placed your city in a position where it will be impossible to provide any large amounts for permanent improvements by further issue of bonds, and any great public improvement will have to be provided for by the position of an oppressive tax. This unfortunate situation could not have been created had previous administrations conformed to the law by making one annual estimate and rigidly maintaining its provisions."

STREET CLEANING AND REFUSE DISPOSAL

To Test Street Oiling

Pine Bluff, Ark.—Pine Bluff City Beautiful Club, composed of women, has decided to oil one mile of one of Pine Bluff's paved streets. This will be to demonstrate the efficiency of the oil in allaying dust, and if it is successful an appropriation will be asked of the city council to oil other streets.

Garbage Fund Is Low

Milwaukee, Wis.—The public works department may find itself seriously handicapped in the collection of garbage this summer as the result of the low state of the city's finances and the large amount spent by the previous officials during the first three months of the year. The total appropriation made in January for garbage collection by the socialist administration was \$92,980, of which \$26,150 was spent during January, February and March, according to figures in the city controller's office. This indicates that almost one-third of the total fund was spent during the first quarter of the year, leaving only \$66,830 for the summer months and until January 1. In previous years the amount was around \$200,000. From the state of the city's finances it is not believed that any further appropriation will be made by the council. Complaints of uncollected garbage continue to pour into the offices of the health commissioner. According to Public Works Commissioner Simmons, collections are being made as fast as possible with the facilities at hand. One complaint from a woman on Twentieth street, who wrote to the health department, said that if her garbage, which had remained uncalled for for six weeks, was not collected she would deliver it at the city hall in person.

City to Collect Garbage

Passaic, N. J.—The National Contracting Company has refused to sign the contract with the city of Passaic for the collection of garbage. This means that the city will again, in accordance with the wishes of the majority of the people, do the collection itself. The contracting company stated that the rules of the board of health were so strict that it would be unable to comply with them except at a loss, its bid being \$5,600.

Dumps Refuse at Sea—Saves Money

Boston, Mass.—Five hundred dollars a week is being saved by the city by dumping the garbage and ashes at sea, according to James Sullivan, acting commissioner of public works, who proposed this method when the New England Sanitary & Product Company refused to extend its contract without an increase in price. Already about 4,000 tons of ashes and garbage have been dumped more than ten miles off the lightship at the entrance to Boston harbor, the nearest point being fully 40 miles from Boston, and so far not a single complaint has been registered from the residents along either the North or South shore, who thought when the plan was proposed that the wash of the sea would carry the garbage up on to the shores. Every day, except Monday, one can see two huge scows, each towed by a small tugboat, proceeding down Fort Point channel, thence down the harbor, out past Boston light and the lightship. These carry all the ashes and garbage of the city collected the previous day. This is costing the city, outside the regular employment of men for the collection of the garbage and its delivery to the two receiving stations at Fort Hill and Albany street, about \$500 a week, this cost being due to extra labor and the expenses of the tugs for towing. Up to two weeks ago the city was paying the New England Sanitary & Product Company \$1,000 a week to take the garbage and ashes to Spectacle island, where for more than a dozen years the garbage has been reduced to by-products. Not until a short time ago did the company discover that the price was not sufficient during the summer, because of the fact that it did not get the same sort of garbage then as during the rest of the year. For many months the original contract between the city and the New England company, of \$1,000 a week, has been extended from time to time pending the settlement of the question as to how Boston should dispose of its garbage for the next ten years. Late in the spring, after the contract with the New England company had been extended to the first of July, the Boston Development & Sanitary Company, of Brooklyn, was given the contract for ten years and was to have its plant ready on July 1. This, however, was impossible because of the long delay in reaching a settlement, and in consequence the city, through Louis K. Rourke, commissioner of public works, sought to extend the contract with the old company until such time as the new company could complete its plant, which it is now estimated will be October 1.

RAPID TRANSIT

Electric Heating for Trolley Cars Planned

Newark, N. J.—The Public Service Railway Company is equipping a number of its winter cars with electrical heating apparatus. In all there will be 214 cars which will be heated by electricity. The lines upon which the new system will be used are the Paterson, Turnpike, Plank Road, Main Line, Elizabeth-Newark, Bergen Pike, White Line, Hudson River, Perth Amboy and South Amboy and Rahway. The heating will be under thermostatic control and in the ordinary-sized cars, like the Paterson type, there will be sixteen heaters placed under the seats. In the larger cars thirty-two heaters will be used. The electric heating, it has been figured out, will afford better control of the car heating, will eliminate much care that is necessary with the coal stoves and insure a more uniform temperature. The electric heating will be much more expensive, the company states, than that afforded by the coal stoves. There are 100 new cars under construction and these will also be equipped with the new heaters.

Ready to Build Interurban

Moorhead, Minn.—With the grant of right of way and power franchises to the H. M. Byllesby company of Chicago by the village of Dilworth, the last franchise necessary for the construction of the Moorhead-Dilworth extension of the Fargo & Moorhead Street Railway Company's lines has been obtained. Property owners have guaranteed the right of way. Manager Hubbard, of the Byllesby company, said that the line between this city and Dilworth will be in operation September 1. The run will be five miles and cars will run every hour. Considerable material for construction already has been ordered.

Approve Trolley Line Lease on Conditions

Trenton, N. J.—With certain restrictions the Board of Public Utility Commissioners has approved the application of the Riverside Traction Company, which runs between Trenton and Camden, for approval of the lease of the road to the Public Service Corporation. The approval is made on condition that the entire face value of the outstanding stock of the Riverside company be paid in full before possession is taken under the lease. Another condition is that the approval of the lease shall not be taken as a presumption that the face value of the now outstanding securities of the traction company provides a proper base upon which earnings may reasonably be fixed. The fourth article of the lease is ordered reframed so as to make obvious the fact that the Riverside has absolute ownership of the lighting and power companies named in lease.

MISCELLANEOUS

Would Regulate Use of City-Owned Autos

Seattle, Wash.—A resolution has been introduced in the city council by A. J. Goddard, requesting the co-operation of the mayor in the matter of compliance with the ordinance by city officials in the use of city-owned automobiles. The resolution sets forth that "city automobiles are used for business and pleasure other than city work; that the machines are not lettered as required by ordinance, and that wives, relatives and women friends of city officials order out the cars and ride in them." Councilman Goddard sought to have it adopted at once, but the vote failed.

Spraying Trees With Steam Fire Engine

Saco, Me.—Mayor Palmer is taking action to have browntail moths killed in Saco and also to destroy the larvae of the elm tree beetle which is working destruction in some of the finest elms in the city. A number of trees are in terrible shape as the result of the work of this beetle and the ground beneath them is littered with dead leaves as in autumn. An experiment is to be tried with one of the steam fire engines, which is to be used to force a jet of steam into the bark and among the leaves of the trees. The insect is believed to have progressed too far this year to be susceptible to the poison sprays that are used at certain stages. If the trouble reappears next year a spraying process will probably be tried.

Paris to Build Model Tenements

Paris, France.—The French government has authorized the city of Paris to borrow \$40,000,000 to build model municipal tenement houses in which the rentals will be the lowest possible consistent with the upkeep of the property.

City to Run Big Farm

Oklahoma City, Okla.—An income of \$40,000 a year from a municipal farm is contemplated by William F. Vahlberg, city park superintendent, if plans he is making for agricultural enterprises are carried out. He proposes to place in cultivation 400 acres along Grand boulevard, an automobile highway twenty-nine miles long that completely circles the city and which was completed recently at a cost of about \$400,000. He expects returns to the city of about \$100 an acre. The area to be cultivated is that owned by the city from the outer edge of the speedway proper to the border of the tract. Vahlberg expects to plant alfalfa principally and some wheat, oats and probably other crops from which there is a good income. The planting and cultivating of these crops would give continual employment to the small army of men employed by the park board, and the profits to the board from the several crops would be considerably larger than if the area were cultivated by private parties.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Public Improvements—Waiver of Rights

Ehlers v. City of Philadelphia.—Where, after a tenant on the line of a proposed street improvement has voluntarily removed from premises without notice from an agent authorized by the municipality, the city subsequently tears down the buildings on the leased premises, it is not liable in damages to the tenant for the loss of his tenancy.—Supreme Court of Pennsylvania, 83 A. R., 431.

Condemnation of Railroad Company's Easement

In re Neponsit Avenue, Adirondack Boulevard and Newport Avenue in the City of New York.—Where property owners laid out and improved a street and, after granting an easement therein to a street railroad company, tendered the city a deed to the fee, the city could not by condemnation proceedings procure title to the railroad company's easement for the benefit of the entire city, and have the expense of the same assessed back upon the owners of the fee.—Supreme Court of New York, 138 N. Y. S., 708.

Contracts—De Facto Officers

Lewin v. Town of Ft. Mitchell et al.—Persons who are elected to the office of board of trustees of a town and who qualify after the time prescribed by statute and assume the duties of the board of trustees are at least de facto officers, and a contract entered into by them with a contractor for street improvements is valid.—Court of Appeals of Kentucky, 147 S. W. R., 922.

Damages—Injuries to Property—Drains

City of Lexington v. Finn.—By some arrangement between defendant city and a lot owner the city had placed pipes in a ditch running through the lot, which was thereupon filled, the pipes covered, and the lot improved. It was then sold to plaintiff in its improved condition. Held that, though the city was not compelled to lay pipes in the ditch as it originally existed, yet after it had done so, the ditch had been filled, and the property improved and sold, plaintiff was entitled to insist that the lot remain in its changed condition, and was therefore entitled to damages sustained by the act of the city in reopening the ditch.—Court of Appeals of Kentucky, 147 S. W. R., 960.

Abandonment of Contract—Right to Materials

Quarteroli et al. v. City of Sonoma et al.—Under Code Civ. Proc., which provides that, if a contractor abandons the work, the contract price applicable to the liens of others than the contractor shall be fixed by taking from the value of the work done and materials furnished and on the ground, which shall thereupon belong to the owner, the payments then due and actually paid, materials left on the ground on abandonment of a building contract with a city belong to the city, where there were no lien claimants, and persons claiming such materials under a bill of sale from the contractor have no rights therein. An award to plaintiffs, who claimed under a bill of sale from the contractor, materials left on the ground on the abandonment of a building contract could not be complained of by them on an appeal from a judgment for the defendants.—District Court of Appeal, California, 123 P. R., 533.

Street Improvements—Minimum Wage

Gerlach et al. v. City of Spokane.—A property owner has a right to have free and open competition in the matter of improvements to be paid for by special assessments, unrestricted by any arbitrary rule or requirement which would have a tendency to increase the cost of the work, so that where a contract for street improvements was let under a city ordinance fixing the minimum wage for work on the improvement at a rate at least 75 cents higher for an eight-hour day than was paid in private employment for a nine-hour day, a property owner may have a reduction of the assessment against his property in equitable proportion to the excess sum paid as wages.—Supreme Court of Washington, 124 P. R. 121.

Regulation of Moving Picture Shows

Dreyfus v. City of Montgomery.—The fact that, at the time of the passage of an ordinance prohibiting moving picture shows in a certain part of the city, the complainant was conducting a moving picture show in the prohibited area under a license from the city, did not affect the legality of the ordinance as to him, his license being a mere privilege, revocable at will, and not conferring any vested or contract rights.—Court of Appeals of Alabama, 58 S. R., 731.

Deprivation of Property Without Compensation

City of St. Louis v. Dreisoerner.—Where defendant erected a building within 600 feet of a park in St. Louis, in which he operated a plant to manufacture altars, chancels, and carved wood for churches, etc., by means of electric power, an ordinance prohibiting the operation of any manufacturing plant wherein machinery of any kind should be maintained and operated by steam, electricity, gas, or other motive power, was invalid, as depriving defendant of his property without compensation and without due process of law.—Supreme Court of Missouri, 147 S. W. R., 998.

Street Grades—Establishment

Barringer Land Co. v. Barber Asphalt Paving Co.—Under Kentucky statutes, which gives the board of public works in cities of the first class exclusive control over the grading, etc., of streets, and under section which requires concurrent action by the general council and the board in the construction of streets, etc., the council need not fix the grade upon which a street shall be constructed when the work is ordered; the matter being properly left to the board, subject to ratification by the council.—Court of Appeals of Kentucky, 147 S. W. R., 893.

Indebtedness—Submission of Question to Vote

O'Neil Engineering Co. v. Incorporated Town of Ryan et al.—To obtain the authority of the qualified voters to incur an indebtedness, or to enter into a contract otherwise prohibited, the proposition must be submitted to them in such specific language as to apprise the voters of the full purpose and the exact and particular thing upon which they are called upon to vote and decide.—Supreme Court of Oklahoma, 124 P. R., 19.

Violation of Ordinances—Punishment

Clark v. Town of Uniontown.—Code provides that, where fine and costs are imposed upon conviction for violating an ordinance, unless the fine and costs are presently paid or judgment confessed in favor of the city authorities, the court must remand defendant to the "city authorities" for punishment, and the clerk must, in writing notify the mayor of the judgment. Held, that the statute applied to all prosecutions for violating ordinances, whether enacted by towns or cities, which are removed to the circuit court by appeal, though expressly referring to "city authorities."—Court of Appeals of Alabama, 58 S. R., 725.

Personal Injuries—Notice

Nesbit v. City of Topeka.—A person injured by the negligence of a city failed to give a notice as required by the act governing cities of the first class. He died from such injuries after the time limited for such notice had expired. His widow gave a notice within four months after his death, and then commenced an action under the statute giving a right of action for damages for death caused by wrongful act. It is held that the action may be maintained, notwithstanding the failure to give the preliminary notice within four months after the injury.—Supreme Court of Kansas.

Ordinance Prohibiting Treating in a Saloon

City of Tacoma v. Keisel.—An ordinance prohibiting treating in a saloon, and making it an offense for the proprietor or seller of intoxicants therein to permit treating, but not making the purchaser liable, is not unconstitutional as a violation of those provisions of the State and Federal constitutions prohibiting deprivation of property without due process of law and guaranteeing to all persons equal protection of the law; the act of buying and selling intoxicating liquor being wholly different.—Supreme Court of Washington, 124 P. R., 137.

NEWS OF THE SOCIETIES

National Municipal League

At the opening of the League, on the evening of July 8, Major Alexander, of Los Angeles, made the address of welcome, which was responded to by Dr. Albert B. Hart, of Harvard University, who also delivered an address entitled "Expert City Government." On July 9 the principal features were addresses by Clinton Rogers Woodruff and Prof. Wm. Bennett Munroe. Mr. Woodruff reviewed the progress of municipal government, stating that simplicity, publicity and efficiency were words introduced within the last half dozen years which could be regarded as significant fingerposts. The continued and widespread growth of the commission plan of city government was, he said, the most significant part of the movement toward simplicity, and he believed that it could be asserted with a fair degree of positiveness that "the double-chambered municipal legislature must yield to the single-chambered one, elected at large." Professor Munroe, speaking on the subject, "Ten Years of Commission Government," called attention to the fact that out of 200 cities which have adopted the plan more than one-half are of less than 5,000 population, and that of the 50 American cities having more than 100,000 population only six have adopted the plan, and not one of the 25 which have more than 200,000 population. He stated that much of the improvement which has been attributed to the commission form of government has been due to a general civic awakening. He pointed out some of the shortcomings of the commission plan, among these being the failure to lay sufficient stress on the merit system of appointment and to give sufficient attention to business provisions. Several committees reported, following which the officers for the coming year were elected, Wm. Dudley Foulke being re-elected president, and Jane Addams, of Chicago; Camillus G. Kidder, of Orange, N. J.; President Lowell of Harvard University; Geo. McNeny, of New York, and Chas. Richardson, of Philadelphia, being re-elected vice-presidents. J. Horace McFarland, of Harrisburg, Pa.; James M. Thompson, of New Orleans, and Dudley Tibbits, of Troy, N. Y., were new vice-presidents elected.

On the 10th, "Municipal Finances and Taxation" was discussed by A. C. Pledell, of New York; Wm. B. Hadley, of Philadelphia; Dr. Jesse R. Burks, of Philadelphia, and others. "Excess Condemnation" was discussed by Robt. S. Blinkerd, secretary of the New York City Club, and "Commission Government and City Planning" by Ernest S. Bradford, of Washington, D. C. John Ihlder, of New York, discussed "Effective Housing Campaigns." In the evening a banquet was tendered to the League. Invitations were received from St. Paul, Washington, Nashville, New Haven, Indianapolis and Minneapolis to hold the next convention of the League in those cities. The selection of the place for the convention has not yet been announced. The convention adopted the resolution to hold its convention as part of a world's municipal congress and municipal exhibition in conjunction with the Panama-Pacific International Exposition in San Francisco in 1915.

Municipal League of Indiana

The twenty-second annual meeting of the League was held at Hartford City, July 9, 10 and 11. Thirty-three cities were represented. During the first session on Tuesday evening, Mayor John H. Herzog of Mishawaka read a paper entitled "The Lighting of a City," in which he stated that his city was the first small city in Indiana to adopt the cluster light system. State Senator Wm. A. Yearly, of Shelbyville, spoke on "Industrial Education," which Dr. E. A. Rumely, of La Porte, discussed. James Scholer, city comptroller of Lafayette, discussed "How Should School Trustees Be Elected and What Power Should They Have?" On Wednesday, Judge Timothy E. Howard, of South Bend, read a paper entitled "Should the Proposed Amendment of the Street Improvement Law, as Reported by the Committee, Be Adopted?" and it was discussed by City Attorney James Fortune, of Jeffersonville; City Engineer Henry Klausman, of Indianapolis, and others. John T. Willett, deputy State food inspector, led the discussion on the subject of "The Milk Supply of a City," a paper read by Dr. W. G. Swank, secretary of the Crawfordsville Board of Health. "What Is the Best Form of Municipal Government?" was the title of a paper read by Thos. Thieme, of Ft. Wayne, discussion of which was led by Judge Lawrence Becker, of Hammond. W. H. Eichhorn, of Bluffton, spoke on the question of "District Workhouses for Municipalities." "Should All Cities Have Public Markets?" was the subject of a paper by Lewis Shank, Mayor of Indianapolis. Following the reading of the paper he answered a number of questions regarding Indianapolis' city market. At the final session on Thursday morning State Senator B. B. Shiveley, of Marion, read a paper entitled "What, if Any, Changes Should Be Made in the Present City and Town Law?" in which it was apparent that he favored the commission form of government.

The officers elected for the following year were as follows: President, A. D. Cunningham, city attorney of Lafayette; vice-president, John W. McCarty, mayor of Washington; second vice-president, W. B. Hess, of Plymouth; third vice-president, O. Rogers, mayor of Lebanon; fourth vice-president, Senator Warren N. Houck, of Lawrenceburg; secretary, A. P. Melton, of Gary; assistant secretary, Judge Field of Lafayette. After considerable discussion between the representatives of Gary and Washington, the former was selected by a decisive vote for the meeting next year, although the representatives from cities in the southern part of the State protested strenuously that the convention had not been held in their section for a number of years.

Society for the Promotion of Engineering Education

This society held its annual meeting at the Somerset Hotel, Boston, on June 29. A number of papers were read and the subject of scientific management was discussed. The following officers were elected: President, Wm. T. Magruder, professor of mechanical engineering, Ohio State University; vice-president, L. S. Marks, professor of civil and mechanical engineering, Har-

vard University; second vice-president, F. W. Sperr, professor of civil and mechanical engineering, Michigan College of Mines; secretary, H. H. Norris, head professor of mechanical engineering, Cornell University; treasurer, W. O. Wiley, publisher, of New York.

Empire State Gas and Electric Association

The quarterly meeting of this association was held in Rochester, July 17. The chief topic discussed was "Electric Vehicles for Pleasure and Convenience." The problem of locating charging stations throughout the country to make touring by electric automobile possible was the main theme of discussion.

International Association of Fire Engineers

President W. H. Loller, Youngstown, O., and Secretary James McFall have sent out bulletins regarding the fortieth annual convention to be held in Denver, Col., September 17-20. All chiefs of departments are invited to attend. They are assured that they will find the social features of the meeting very agreeable, that many little points may be picked up that have a practical value, and the opportunity to see a large number of the latest styles of apparatus and appliances is one that should not be missed. Manufacturers and dealers in department supplies are invited to attend and make exhibits in the large hall that has been provided. Chief Fred H. Wilson, Jamestown, N. Y., is chairman of the committee to whom applications for space should be addressed. Regarding transportation, no special rates will be given, but members and guests should avail themselves of the low summer tourist fares prevailing at that time. Special parties are being arranged, starting from New York, Boston, Pittsburgh, Cincinnati, Atlanta, Dallas, St. Louis and Chicago.

The topics for discussion are as follows:

No. 1.—"Fire Prevention and Building Inspection by Members of Fire Departments," Fred Brodbeck, chief, Salina, Kan.; A. M. Schoen, manager S. E. Underwriters Association, Atlanta, Ga.

No. 2.—"The Triple Combination Hose Wagon, Chemical and Pumping Engine—Is It a Success?" F. J. Connerly, chief, New Castle, Pa.

No. 3.—"The Proper Location of Sprinkler Tanks; Should They Be Located on Roofs, Fire Walls or Separate Towers?" J. A. Tremblay, chief, Montreal, Canada.

No. 4.—"Tractors for Steam Fire Engines, Aerial Trucks and Water Towers," John Kenlon, chief, New York; R. H. Bawker, chief, Passaic, N. J.

No. 5.—"The Care of Fire Hydrants to Prevent Freezing and the Best Way to Thaw Out Frozen Fire Hydrants," C. W. Ringer, chief, Minneapolis, Minn.; John Aiken, chief, London, Ont.

No. 6.—"Direct Connection from City Water Mains to Sprinkler Systems and Stand Pipes," F. A. Raymond, engineer, National Board Fire Underwriters, New York.

No. 7.—"Motor vs. Horse-Drawn Apparatus in Heavy Snows," James Smart, chief, Calgary, Canada.

No. 8.—"The Efficiency of the Motor Pumping Engine," Geo. W.

Boothe, chief engineer National Board Fire Underwriters, New York.

No. 9.—"A Review of the Association Work for the Past Ten Years," Howard L. Staunton, chief, Norwich, Conn.

Fire Marshals' Association of North America

The seventh annual meeting was held at Detroit, July 11 and 12. Fifteen of the twenty-eight States having fire marshals were represented. The proposed uniform fire marshal law compiled by the National Board of Fire Underwriters was the principal topic of discussion. In his annual address the president of the association, Insurance Commissioner C. A. Palmer, of Michigan, recommended the appointment of a committee of laws and legislation to present a uniform fire marshal's law to the legislatures of the various States. Fire Marshal J. R. Young, of North Carolina, said among other things: "It is a question whether any real progress can be made in checking our enormous fire waste until the man who has the fire ceases to be regarded as unfortunate and is looked upon as a public offender." The subject of "Inspections" was discussed by John W. Zuber, of Ohio; "Prosecutions" by J. K. Young, of North Carolina; "The Criminal Match," by Jos. Button, of Virginia, and "Fire Prevention and Its Effect Upon the Cost of Fire Insurance," by C. A. Ellison, of West Virginia. Chas. E. Keller, of Minnesota, spoke on "Fire Prevention Through Legislation," in which he named a number of acts leading to fires which he believed should be made criminal; among these being accumulations of rubbish in cellars, alleys or elsewhere; carelessness in handling oily rags; smoking in barns, lumber yards, factories and similar buildings; carelessness around garages; permitting children to play with matches; placing ashes in anything but metal receptacles; allowing soot to accumulate in chimneys; maintaining defective stove or stove pipes; the use of candles by plumbers or other workmen.

League of Cities of the Third Class of Pennsylvania

The convention this year will be held in Wilkes-Barre, August 27-29. The Wilkes-Barre officials are already planning to entertain the delegates, and the convention promises to be the largest attended and most important held since the League was organized. The program for the convention sessions has not been completed, but papers on different phases of city government will be read by some of the most prominent third-class city officials in the State. Among the many things that will be considered at the convention is the question of redistricting the cities so as to reduce the number of wards. Taking Altoona as an example, the members of the League figure that there would be but six wards, and only one common councilman from each, with five select councilmen-at-large, thus making but 11 men in the legislative branch. This scheme, as well as the plan for the commission form of government, will receive consideration. The allied civic clubs of the State, which held their convention in Lancaster last winter, went on record as favoring commission government, and the advocates of the plan will try to secure the endorsement of the League. Bills will be presented in the Legislature at the next session, and the en-

dorsement of the League would mean a great deal.

Among the officials who will speak at the coming convention and their subjects will be Daniel S. Seitz, solicitor of Harrisburg, whose topic will be "Present Form of City Government"; ex-Mayor Dimmick, of Scranton, "Scranton's Experiment with Commission Form of Government"; Dr. Samuel Dixon, State Health Commissioner, "Boards of Health vs. Sanitary Committees"; William Edwards, New York street cleaning commissioner, "Modern Methods of Street Cleaning"; City Solicitor Hughes, of Erie, "The Elimination of Railroad Crossings"; City Solicitor Gardner, of New Castle, "Legislation Needed in the Session of 1912-13"; City Solicitor Gardner, of Wilkes-Barre, "Methods of Having the Dangerous Railroad Crossings Eliminated Without Cost to the City."

Calendar of Meetings

August 26-27.

International Conference on People's Baths and School Baths.—Conference Scheveningen (The Hague).—A. M. Douwes Dekker, General Secretary, The Hague.

August 28-30.

International Association of Municipal Electricians.—Seventeenth Annual Convention, Peoria, Ill.—Clarence R. George, Secretary, Houston, Tex.

August 27-29.

League of Third Class Cities of Pennsylvania.—Annual Convention, Wilkes-Barre, Pa.

August 27-29.

Union of Canadian Municipalities.—Annual Meeting, Windsor, Canada.—W. D. Lighthall, Secretary-Treasurer, 305 Quebec Bank Building, Montreal, Quebec, Canada.

August 28-30.

Fourth International School Hygiene Congress.—Meeting, Buffalo, N. Y.—Dr. Thomas Storey, Secretary, Convent avenue and 139th street, New York, N. Y.

August 28-30.

Virginia State Firemen's Association.—Twenty-sixth Annual Convention and Tournament, Roanoke, Va.—L. E. Lookabill, Vice-President, Roanoke.

September 6-13.

Congress on Applied Chemistry.—Meeting, Washington, D. C.—Bernard C. Hesse, M.D., Secretary, 25 Broad street, New York, N. Y.

September 9-13.

Pacific Coast Fire Chiefs' Association.—Annual Convention at Los Angeles, Cal.

September 17-20.

International Association of Fire Engineers.—Annual Convention, Denver, Col.—James McFall, Secretary, Roanoke, Va.

September 18-19.

New England Water Works Association.—Thirty-first Annual Convention, Washington, D. C.—Willard Kent, Secretary.—Headquarters, Boston, Mass.

September 18-20.

American Public Health Association.—Washington, D. C.—Seldcar M. Gunn, Secretary, 289 Fourth avenue, New York, N. Y.

September 23-28.

Fifteenth Congress on Hygiene and Demography.—Meeting, Washington, D. C.—Dr. John S. Fulton, Secretary, Army Medical Museum, Washington, D. C.

September 24-28.

Chambers of Commerce and Industrial and Commercial Associations.—Fifth International Congress, Boston, Mass.

September 24-26.

Central States Water Works Association.—Sixteenth Annual Convention, Detroit, Mich.—R. P. Bricker, Secretary, Shelby, O.

September 30-October 5.

American Road Congress.—First Annual Meeting, Atlantic City, N. J. Logan Waller Page, President, Washington, D. C.

November 12-15.

American Society of Municipal Improvements.—Annual Convention, Dallas, Tex.—A. Prescott Folwell, Secretary, 50 Union Square, New York.

California Association of Electrical Contractors

The third annual convention of the California State Association of Electrical Contractors will be held in San Jose July 24 to 27, inclusive. It is expected that 600 visiting delegates will be present and the local organization is planning an elaborate entertainment for its guests.

The following is the program:

Wednesday, July 24.—10 a. m. to 2 p. m., business meeting, members only; 1:30 p. m., ladies and visitors' sight-seeing trip to Congress Springs and Los Gatos; 8 p. m., reception, concert, dance.

Thursday, July 25.—10 a. m. to 2 p. m., business meeting, members only; 11 a. m., sight-seeing trip through the foothills to Palo Alto, with lunch; 8 p. m., Sons of Jove rejuvenation, theater party, ladies and visitors.

Friday, July 26.—10 a. m. to 2 p. m., open meeting for all; 1:30 p. m., ladies' and visitors' sight-seeing trip to Alum Rock canyon; annual dinner.

Saturday, July 27.—Electric trades day. Picnic and lunch at Luna Park; dancing, games with prizes, baseball between northern and southern contractors at 10 a. m., game between supplymen and contractors at 4 p. m.

PERSONALS

AITCHISON, GEORGE, Miles City, Mont., has been appointed Chief of the Fire Department.

BARBOUR, IRVING W., Portland, Ore., has resigned his position as Field Engineer of the Water Department, to become a highway engineer with the U. S. Office of Public Roads, Washington, D. C.

BARNETT, CAPTAIN EDW., of Engine Co. No. 1, Atlantic City, N. J., was instantly killed July 17 while attempting to extinguish a small fire in the City Hall tower, 150 feet from the ground, by coming in contact with an electric light wire carrying 57,000 volts. Captain Barnett was 48 years old and had been connected with the local department for twenty years.

CATLIN, FREDERICK M., St. Paul, Minn., has been appointed Chief of Police.

DODD, DR. J. N., Ashland, Wis., who holds the office of Mayor of the town, has been appointed a member of the State Board of Medical Examiners.

DUNLAP, FRED C., Philadelphia, Pa., Chief of the Bureau of Water, has tendered his resignation to take effect September 15.

FRIES, MAJOR AMOS A., United States Army Engineer, has been appointed Special Harbor Engineer of the city of Los Angeles, Cal., for three years at a salary of \$6,000 per year.

HAMMOND, HOMER J., Richmond, Ind., President of the Board of Works, has tendered his resignation.

HUDSON, LEO, Consulting Engineer, McKeesport, Pa., has been retained by the Borough of Tarentum for the purpose of making a report on the water supply.

KLYCE, B. H., Jackson, Miss., who held the office of City Engineer, has accepted the position of City Engineer at Waycross, Ga.

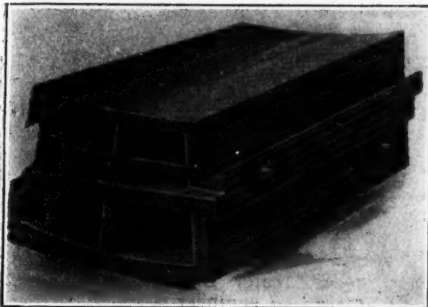
LANE, R. A., Cleveland, O., has been re-elected President of the Ohio State Firemen's Association.

MAURY, DABNEY H., Consulting Engineer, has moved his office from Peoria, Ill., to 1137-38 Monadnock Block, Chicago, Ill.—Douglas A. Graham will be Mr. Maury's principal assistant.

MUNICIPAL APPLIANCES

Vitrified Sewer Block

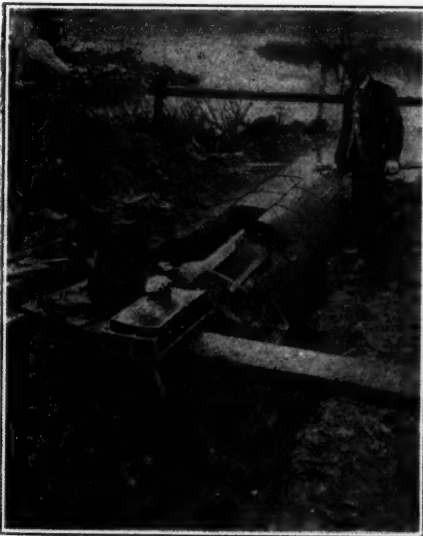
The American Sewer Pipe Co., of Akron, O., has placed on the market a hollow arch block to be used in constructing sewers which it believes to be a great improvement over any blocks previously manufactured for this purpose. The principal objection to the use of these blocks in the past has been that each joint at the sides and ends of each block extended entirely through the sewer and thus made it almost impossible to secure tight work. The blocks shown in the illustration are provided with dove-tailed joints on the longitudinal edges of the block and ship-lap joints at the ends. The dove-tail combined with the corrugated faced, when thoroughly mortared, offer great resistance against pressure from either within or without. The ship-lap joint is made possible by a web or a system of webs which provide a backing for the mortar and an annular



SEWER BLOCK.

space is secured which, when filled with mortar, provides an absolutely sanitary joint. These blocks are furnished for sewers ranging in size from 36-inch to 108-inch in diameter. They are made as large as can be conveniently handled and have an inside area of approximately 270 square inches, thus eliminating in a large measure the objectionable features of numerous joints.

The outer openings in the hollow block system are particularly well adapted to carrying surface water and are also of special value to the contractor in that they may be used as



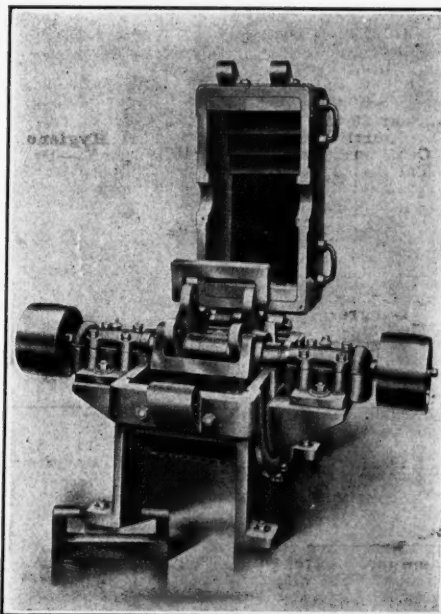
BLOCK SEWER UNDER CONSTRUCTION.

drains when constructing a sewer in a wet trench, thus obviating the necessity of laying underdrains.

In laying, the bottom block is laid ahead for drainage purposes and the successive tiers are carried up from this, earth being thoroughly tamped behind them or mortar thrown back of the block. The male and female dove-tail joints are so constructed that only the key block requires slipping in endwise, all the other blocks dropping into place on the side. The manufacturers claim that it is possible to build more feet of sewer per day with this form of construction than with any other, one contractor recently having laid 1,372 blocks, or 98 feet, of 48-inch sewer in a day.

Gardner Crusher

The Gardner crusher, disintegrator and pulverizer is claimed to be adapted for grinding any material, wet or dry, to any desired degree of fineness, ranging from 2½-inch to 20-inch mesh and under. It can crush any size of stone, providing they pass through the opening, which is 10 x 7½ inches in the No. 1 crusher, 13 x 10 inches in the No. 2 and 19½ x 10½ inches in the No. 3. This crusher can be used as a single



CRUSHER WITH TOP RAISED.

stage machine, meaning that it can be fed with material direct from the quarry or from a jaw crusher and in one operation reduce this material to the desired fineness without the use of an accessory equipment.

The machine consists of a cast iron frame in two parts, a lower and an upper, which are planed off on their contact surfaces and fit together with a dust-tight joint. The top is connected to the base on both sides by hinges, which permits quick inspection and cleaning of the apparatus by simply stopping it, removing the bolt and lifting the top, when the crusher will open like a box. The main shaft is in the lower part of the frame, resting on two plumber's blocks of special model, of

large bearing and self oiling. This shaft has a speed of 1,000 to 1,200 revolutions per minute. It carries two check pieces which are connected by five or six articulated hammers in the shape of cranks. These flying hammers are the only parts of the apparatus that wear, although they are made of the best steel obtainable, their life being from one month to one year according to the hardness of the material crushed.

The bottom of the apparatus consists of a rounded perforated iron plate which acts as a screen for the discharge of the material. These screens can be made of any size. For coarse grinding, crushers are provided with grates instead of screens.

The top carries on its inside movable ribs of extra hard metal which can be moved down near the cranks. This permits regulating the degree of fineness of the crushed material. Material is fed into the crusher through a mouth at the side of the top piece, the feeding being performed either with shovels or by an automatic feeder. The latter method will considerably increase the yield of the crusher, and will also improve the output of the mill in fineness and requires less power. The six whirling cranks strike the stones in a more efficacious way than would a rigid hammer, the successive cranks striking the chips formed by the previous ones until they are reduced to a fineness sufficient to pass through the screen.

INDUSTRIAL NEWS

Cast Iron Pipe.—Chicago: Large lettings are scarce, but awards of small lots and miscellaneous inquiry are good. Based on the recent advances in pig iron, pipe prices are firmer and on some sizes higher quotations are being made. Quotations: 4-inch, \$27.50; 6 to 12-inch, \$26; 16-inch and up, \$25. Birmingham—No considerable new business has been reported recently, but a number of small orders have been received and plants are being urged to ship promptly. Manufacturers are as optimistic as they have been for some time and report a good outlook for new business. Quotations: 4-inch, \$24; 6 to 8-inch, \$22; 10-inch and up, \$21.50. San Francisco—Small orders are fairly numerous, but do not develop a very heavy tonnage. While many municipal projects are developing, more have taken the shape of definite inquiries. New York—Buying continues largely in 4 and 6-inch pipe and is not confined to any one locality. While prices cannot be quoted as higher, some foundries are getting better than the minimum. The volume of business is larger than for several years. Quotations: 6-inch, carloads, \$22 to \$23.

Lead.—Demand is light, supply large and prices easier. Quotations: New York, 4.70c.; St. Louis, 4.60c.

Universal Cast Iron Gas Pipe.—The Middleboro, Mass., Middleboro Municipal Gas & Electric Plant has just completed the installation of approximately two miles of 4 and 6-inch Universal cast iron gas pipe, manufactured by the Central Foundry Co., New York. Pipe has been tested and municipality is now using gas pipe and adding new consumers on new line. G. A. Philbrook is the general manager.

Fire Extinguishing Appliance.—An appliance or system for extinguishing fire, known as the Kanawha Air Pressure System, which is now controlled by James Boyd & Bro., Inc., was recently tested by the Philadelphia Fire Department. The apparatus used a nozzle of only one-quarter inch diameter, but was able to extinguish in eight minutes a blaze in a building erected for the test. In order to compare its performance with that of the regular chemical engines of the department, one of these, which was equipped with a three-eighths-inch nozzle, having an area two and one-half times as great, was used to extinguish a similar fire at the same time, and it is reported that the Kanawha apparatus was easily first in extinguishing its fire.

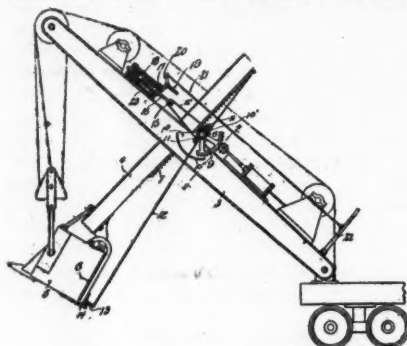
A New Fabricating Company.—The Blaw Steel Centering Company, with general offices in the Westinghouse building, Pittsburgh, and operating a plant at Reynoldsville, Pa., on the Buffalo, Rochester & Pittsburgh and Allegheny Valley railroads, has bought 10 acres of land at Hoboken, Pa., on the West Penn railroad, about 10 miles from Pittsburgh. On this site the company will build a new plant for making its present line of steel centers for all kinds of concrete work and will also do a steel fabricating business in structural work, making a specialty of building galvanized steel towers for carrying high tension transmission lines, also power houses and steel buildings, besides making specialties for other concerns that do not have manufacturing facilities. A few months ago F. M. Bowman, Wayne Rawley and Alexander H. Bovard, formerly with the Riter-Conley Manufacturing Company, connected themselves with the Blaw Steel Centering Company, and the company decided to enlarge its lines of product by including structural steel work. The main building at the new plant will be 120 x 600 feet and the yards will be equipped with three runways, one 50 x 100 feet, one 70 x 150 feet and one 70 x 300 feet. There will be a 25-ton electric crane, a 20-ton, a 10-ton and other smaller cranes. The company will have a capacity for fabricating 2,500 tons of steel per month. It will be in the market for a full line of iron working tools, shears, bending machinery, air compressors and other equipment.

The Blaw Steel Centering Company was the original manufacturer of steel forms for concrete work. It first confined its output to steel centers for sewers, and then extended its output to all classes of concrete work. It has filled very large contracts for its products in the United States, Canada, Mexico and Great Britain in the last five years. Notable contracts for concrete work for which the company furnished steel centering include the Baltimore sewerage system, the Boston subways, Louisville sewerage system, New York subways, New York Catskill aqueduct, Baltimore & Ohio tunnel systems and the Virginia railway tunnel systems. The officers of the company are Moses Lehman, president; A. C. Lehman and F. M. Bowman, vice-presidents; B. L. Hirshfield, treasurer; C. H. Lehman, secretary; Wayne Rawley, general superintendent, and C. D. McArthur, chief engineer. The company will shortly change its name to the Blaw Steel Construction Company. It will push work on its new plant at Hoboken as fast as possible.

PATENT CLAIMS

1,031,402. EXCAVATOR. Thomas G. Travers, Iron Ridge, Wis. Serial No. 653,941.

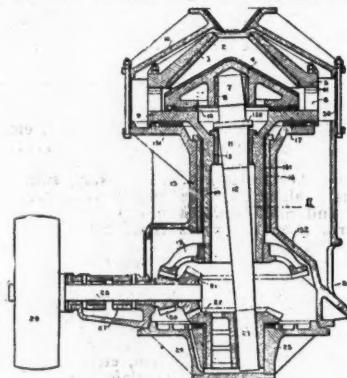
In an excavator, a rocker, a pair of pulleys carried by the rocker, another pulley and means for reciprocating the same, and a taut cable having a bight thereof trained on said pulleys, the ends



of the cable being secured in connection with the traveler beam and dipper door latch releasing mechanism of the machine.

1,031,083. CRUSHER. Ray C. Newhouse, Milwaukee, Wis., assignor to Allis-Chalmers Co., Milwaukee, Wis., a Corporation of New Jersey. Serial No. 690,587.

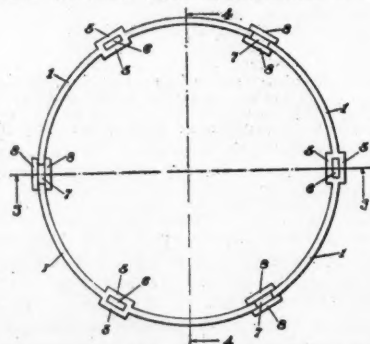
A crusher comprising a pair of crushing members, means for causing rotation of said members to feed material from end to end thereof by centrifugal force,



and a shaft for gyrating one of said members, said shaft being disconnected from said member and having its axis inclined relative to the axis of said member.

1,031,050. CONCRETE RESERVOIR. John E. Conzelman, St. Louis, Mo., assignor to Unit Construction Co., St. Louis, Mo., a Corporation of Delaware. Serial No. 659,297.

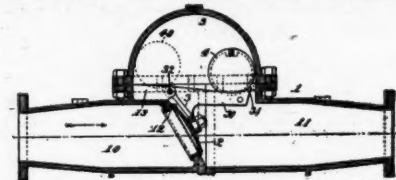
A concrete reservoir comprising a plurality of annular rows of arcuated slabs, said rows being supported one on top of another, each of said slabs having an opening extending vertically there-through, the slabs of each row being arranged to have intervening spaces between the ends thereof, the slabs of each



alternate row being arranged so that the openings therein register in vertical alignment with the spaces between the ends of the slabs of the other rows, blocks closing the sides of said spaces, and a concrete filler for said spaces and said openings adapted to set integrally with said blocks and said slabs.

1,031,514. AUTOMATICALLY CONTROLLED BY-PASS. Adolf L. Bjorkstam and James M. Ferguson, Seattle, Wash. Serial No. 657,658.

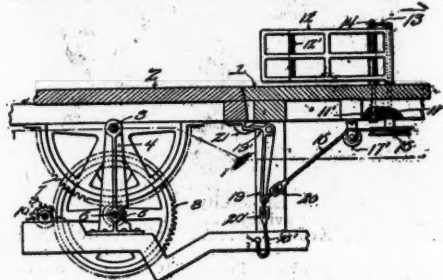
The combination with a valve casing having a valve seat, a valve hinged to the casing above the valve seat, a trackway secured to and swinging with the valve and extending from the pivot outward over the valve, said trackway,



when the valve is in closed position, being inclined downward as it extends away from the valve pivot, a weight mounted to roll upon said trackway, and a receiving holder for said weight in position to receive the weight when it is rolled backward beyond the pivot by the upward swinging of the valve.

1,031,333. SAFETY GATE FOR BASCULE BRIDGES. Casper Faust, Oshkosh, Wis. Serial No. 681,774.

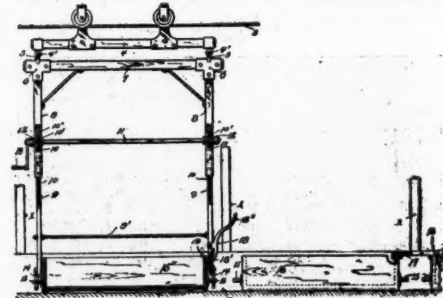
In a lift bridge member having a heel end abutment, trunnions for the bridge member supported thereby, and raising and lowering means in gear connection with the bridge trunnions; the combination of a shoe secured to the heel of the bridge, a bell crank mounted upon the adjacent abutment having one arm adapted to be engaged by the shoe when the bridge is closed, pairs of vertically disposed parallel posts journaled in the



abutment and extending upward there-through, cranks secured to the upper ends of each pair of posts, a link connecting each pair of the cranks, gates secured to the posts, a cable connecting one of the posts of each pair and a bell crank lever, a weight secured to the free end of the cable whereby the gates are swung open incidental to engagement of the shoe and bell crank, and means for limiting movement of said bell crank lever.

1,030,921. SANITARY APPARATUS FOR ANIMAL STALLS. Frank J. Redmond, Forest, Wis. Serial No. 666,298.

A plurality of animal stalls, a catch basin transversely disposed rearwardly of the stalls, a portable tray for each stall seated within the basin, an overhead carrier arranged to travel longi-



tudinally of the catch basins and over the same, means in connection with the carrier for selective engagement with any one of said trays, hoisting mechanism, means for locking the trays to the carrier in an upright position, and trip mechanism for releasing the lock trays whereby they are dumped.

1,031,352. ELECTRIC-ARC LAMP. John C. Lincoln, Cleveland, O., assignor to the Lincoln Co., Cleveland, O., a Corporation of Ohio. Serial No. 250,217.

In an adjustment for electric arc lamps, the combination with a serrated rod, of a support for the movable carbon of the lamp and a weighted escapement thereon engaging the serrated rod and adapted to check the sudden movement of the movable carbon-support.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards.

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK.	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Ohio.....	Elyria.....	July 29, 1 p.m.....	Grading and macadamizing road.....	County Comrs.
Alabama.....	Opelika.....	July 29, noon.....	Constrn. 6 miles top soil road.....	County Comrs.
Maine.....	Portland.....	July 29.....	Constrn. 4½ miles road near Cape Neddick village.....	Highway Department.
Canada.....	Orillia.....	July 29.....	Constrn. 120,000 square feet concrete sidewalk.....	E. L. Long, Chairman.
Pennsylvania.....	Hollidaysburg.....	July 29, 8 p.m.....	Constrn. 7,500 yards brick pavement.....	J. W. Gromiller, Chairman Comm.
Pennsylvania.....	Erie.....	July 29.....	Constrn. curb on Twenty-fifth street.....	City Clerk.
Canada.....	Sault Ste. Marie.....	July 29, 7 p.m.....	Constrn. 6,300 yds. brick, 39,000 yds. asphaltic concrete and 7,200 yds. macadam.....	W. H. Monroe, Mayor.
Ohio.....	Newton Falls.....	July 29, noon.....	Macadam. and draining a number of roads.....	J. B. Beard, Clk.
Dist. Columbia.....	Washington.....	July 29, 2 p.m.....	Imp. suburban streets.....	C. R. Rudolph, Comr.
Maine.....	Augusta.....	July 29, 3 p.m.....	Constrn. cement or bituminous concrete roads.....	L. P. Hardison, Comr.
Illinois.....	Pontiac.....	July 29, 7 p.m.....	Constrn. vit. brick pav't in number of streets; also 5 blocks of creosoted block.....	Wm. Church, Clk.
Iowa.....	Perry.....	July 29, 8 p.m.....	Constrn. 13,000 sq. yds. pav't.....	Adrian Cross, City Clk.
Wisconsin.....	Plymouth.....	July 30, 8 p.m.....	Constrn. 4,500 sq. yds. concrete brick or asphalt macadam.....	C. W. Jackson, City Clk.; W. G. Kirchoffer, Engr., 31 Vroman Bldg., Madison, Wis.
New Jersey.....	Elizabeth.....	July 30, 3 p.m.....	Constrn. 8 county roads.....	J. L. Bauer, County Engr.
Canada.....	N. Toronto, Ont.....	July 30, noon.....	Constrn. Tarvia on 5 streets, asphalt, asphaltic concrete or other pav't on 8 streets.....	E. A. James, Engr.
Pennsylvania.....	Harrisburg.....	July 30.....	Constrn. nearly 20 miles State highway.....	E. M. Bigelow, Comr.
Ohio.....	Dillonvale.....	July 30, noon.....	Paving with brick.....	C. W. Mercer, Vil. Clk.
Ohio.....	Painesville.....	July 30, 10 a.m.....	Constrn. 2.21 miles bituminated concrete.....	County Commissioners.
Utah.....	Salt Lake City.....	July 30.....	Constrn. 50,000 yds. bitulithic pav't.....	N. Warrum, City Recorder.
Alabama.....	Decatur.....	July 30, 8 p.m.....	Constrn. asphalt macadam, cement curbs, etc.....	H. A. Skeggs, Mayor.
New York.....	Long Island City.....	July 30.....	Constrn. highways; cost, \$1,000,000.....	M. E. Connolly, Boro. Pres.
Illinois.....	Jerseyville.....	July 30.....	Constrn. brick pav't; cost, \$13,000.....	City Council.
Ohio.....	Xenia.....	July 31, 10 a.m.....	Constrn. 2.02 miles gravel macadam, sulphite treatment optional; also .83 mile gravel.....	County Commissioners.
Ohio.....	Powhatan Point.....	July 31, noon.....	Grad. and macadam. 2.4 miles road.....	G. L. Bonar, County Clk.
Rhode Island.....	Providence.....	July 31, noon.....	Constrn. about 13 miles State road.....	J. H. Edwards, Chm. Bd. Selectmen.
Massachusetts.....	Warren.....	July 31.....	Constrn. 1,100 feet road.....	E. L. Bonar, Clerk.
Ohio.....	York.....	July 31.....	Macadamizing 2.4 miles of road.....	A. E. Steers, Boro. Pres.
New York.....	Brooklyn.....	July 31, 11 a.m.....	Constrn. sidewalk on number of streets.....	County Commissioners.
Ohio.....	Lancaster.....	July 31, 11 a.m.....	Constrn. 4.28 miles macadam.....	
Florida.....	Fort Myers.....	Aug. 1, noon.....	Constrn. 10 miles macadam, including drainage, etc.....	H. E. Heitman.
Tennessee.....	Johnson City.....	Aug. 1, 7 p.m.....	Paving with asphalt, concrete or other pavement.....	P. F. McDonald, City Comr.
New Jersey.....	Elizabeth.....	Aug. 1, 8:30 p.m.....	Constrn. 1,161 yds. brick pave't.....	R. L. Goff, City Surveyor.
New Jersey.....	Ocean City.....	Aug. 1.....	Constrn. bituminous macadam, etc.; cost, \$65,000.....	W. J. Gaynor, Mayor.
New York.....	New York.....	Aug. 1, 11 a.m.....	Constrn. 4,510 sq. yds. macadam pav't.....	Peter Hertz, Sec'y.
Pennsylvania.....	Newport.....	Aug. 1.....	Constrn. 1,430 yds. brick.....	P. H. Hill, Chm. Comrs.
Arkansas.....	Little Rock.....	Aug. 1, noon.....	Constrn. 13,300 lin. ft. curb and sidewalk.....	Stanley Struble, Pres. Co. Comrs.
Ohio.....	Cincinnati.....	Aug. 2, noon.....	Imp. a number of roads.....	H. A. Shuart, County Clk.
New Jersey.....	Hackensack.....	Aug. 2, 2 p.m.....	Constrn. macadam in several streets.....	County Commissioners.
Ohio.....	Lisbon.....	Aug. 2, 10 a.m.....	Constrn. 1 mile brick road.....	W. P. Neafsey, St. Comr.
Ohio.....	Cleveland.....	Aug. 3, 11 a.m.....	Improving Green road.....	J. F. Goldenbogen, Co. Clk.
Kansas.....	Atchison.....	Aug. 5.....	Imp. road.....	Edw. Iverson, County Clk.
Mississippi.....	Hernando.....	Aug. 5.....	Grading roads; cost, \$100,000.....	F. M. Holcomb, County Clerk.
Kansas.....	Kansas City.....	Aug. 5.....	Constrn. macadam pavement.....	Commissioners.
Alabama.....	Mobile.....	Aug. 5.....	Constrn. 13,900 yards wood block, 16,000 yards asphalt, 12,700 yards vitrified brick.....	
New Jersey.....	Bloomfield.....	Aug. 5, 8 p.m.....	Pavg. and grading number streets.....	J. P. Winezewski, County Aud.
Minnesota.....	Winona.....	Aug. 5.....	Constrn. 16 miles of road.....	Thos. Ganey, Boro. Sec'y.
Pennsylvania.....	So. Bethlehem.....	Aug. 5, 8 p.m.....	Constrn. 18,000 sq.yds. with Amiesite & 1,000 yds. brick pav't.....	County Commissioners.
Alabama.....	Stevenson.....	Aug. 6, noon.....	Grad., grading and macadamizing road.....	R. C. Clifton, Clk.
Mississippi.....	Greenwood.....	Aug. 6, noon.....	Constrn. 25,000 yds. pav't.....	J. S. Allen, City Engr.
Alabama.....	Scottsboro.....	Aug. 6, noon.....	Macad. roads; cost, \$14,000.....	County Commissioners.
Indiana.....	Brazil.....	Aug. 6, 11:30 a.m.....	Constrn. macadam roads.....	
New York.....	Newburg.....	Aug. 6, 5 p.m.....	Pav. street with asph. block, bit., vit. brick or Hassam pav't, 3,400 sq. yds. paving.....	City Clerk.
Indiana.....	Marion.....	Aug. 6, 2 p.m.....	Constrn. 4 stone and gravel roads.....	E. H. Kimball, County Aud.
Indiana.....	Decatur.....	Aug. 6, 10 a.m.....	Constrn. macadam roads.....	H. S. Mischaud, County Aud.
Indiana.....	Crown Point.....	Aug. 6.....	Constrn. 8 gravel roads.....	Board of Commissioners.
Washington.....	Port Orchard.....	Aug. 7, 9 a.m.....	Constrn. permanent highway No. 1.....	J. M. Peterson, County Aud.
Alabama.....	Greenville.....	Aug. 7, 10 a.m.....	Constrn. 12 miles sand clay road; cost, \$17,000.....	E. A. Staggs, County Aud.
Ohio.....	Portsmouth.....	Aug. 7, noon.....	Imp. 7,500 ft. road.....	T. C. Patterson, County Aud.
Mississippi.....	Macon.....	Aug. 7.....	Constrn. 24.5 miles sand clay road; also 16 miles gravel road (separate bids).....	
New Jersey.....	Glen Falls.....	Aug. 7, 8 p.m.....	Constrn. pav't on 2 streets.....	Road Comrs. District 3; Wheelock Engineering Co., Birmingham, Ala.
Texas.....	Corpus Christi.....	Aug. 9.....	Constrn. street pav'ts.....	City Council.
Ohio.....	Cincinnati.....	Aug. 9, noon.....	Resurf. Cleves and Warsaw pike.....	N. Scales, Chm. Comrs.
Indiana.....	Fowler.....	Aug. 12.....	Constrn. Matthew-Moran free-stone road.....	Stanley Struble, Pres. Co. Comrs.
Ohio.....	Cleveland.....	Aug. 14, 10 a.m.....	Constrn. 2.94 miles brick pav't.....	L. Shipman, County Aud.
Alabama.....	Marion.....	Aug. 12, 2 p.m.....	Constrn. 4½ miles gravel roads.....	County Commissioners.
Alabama.....	Rockford.....	Aug. 12, 2 p.m.....	Constrn. 6 miles top-soil road.....	County Commissioners.
West Virginia.....	Princeton.....	Aug. 13, noon.....	Constrn. 3 miles road.....	County Commissioners.
Alabama.....	Livingston.....	Aug. 13.....	Gradg. & surfacing with chert 3½ miles State-aid road.....	Mayor Pease.
Texas.....	Temple.....	Aug. 13, 8 p.m.....	Pav. Central avenue with brick or creosoted blocks.....	County Commissioners.
Alabama.....	Livingston.....	Aug. 13, noon.....	Constrn. 3½ miles chert road.....	M. O. Woodward, City Sec'y.
Mississippi.....	Forest.....	Aug. 26.....	Constrn. 2,500 miles gravel macadam road.....	County Commissioners.
Illinois.....	Kankakee.....	Aug. 30 (about).....	Constrn. 65,000 sq. yds. vit. brick paving.....	G. A. McIlheney, Sec'y Comrs.
Florida.....	Ocala.....	Aug. 20.....	Constrn. 12,000 yds. brick.....	W. A. Brown, Engr.
Mississippi.....	Laurel.....	Sept. 1.....	Constrn. brick or creosoted wood pav't, 60,000 yds.....	B. W. Alpiner, Mayor; R. D. Clegg, H. C. Sistrunk, City Clk.
South Carolina.....	Columbia.....	Sept. 14, noon.....	Maintain roads.....	City Engr.
				J. H. Crawford, City Clk.; Iowa Eng. Co., Clinton, Ia. County Supervisors.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
SEWERAGE				
Canada.....	Sudbury, Ont.....	July 29.....	Constrn. sewer disposal plant.....	Geo. Elliott, Town Clk.
New Jersey.....	Westfield.....	July 29, 8 p. m.....	Constrn. 2 concrete sedimentation tanks, 2 filters, etc.....	Chas. Clark, Town Clk.
North Dakota.....	Minot.....	July 29.....	Constrn. 15,800 10-inch, 3,900 feet 12-inch sewers.....	L. J. Thompson, City Auditor.
Ohio.....	Lakewood.....	July 29, noon.....	Constrn. sanitary sewer.....	J. W. Christord, Dir. Pub. Serv.
Indiana.....	Knox.....	July 30, 2 p.m.....	Constrn. sanitary sewer system; est. cost, \$20,700.....	Board Trustees.
Kansas.....	Independence.....	July 30.....	Constrn. 1/2-mile 24-in. to 4-ft. monolithic or brk storm sewers	A. H. Kriehagen, City Clk.
New Jersey.....	Linden.....	July 30, 8 p. m.....	Constrn. 1,032 ft. 8-in. stoneware pipe.....	J. L. Bauer, Engr.
New Jersey.....	Westmont.....	July 30, 8 p.m.....	Constrn. 27,000 ft. 6 to 36-in. clay pipe sewer.....	A. M. Matthews, Chm. Comm.
Connecticut.....	Hartford.....	July 31, 11 a.m.....	Constrn. 15 to 24-in. sewer and furnishing 10 to 16-in. c. i. pipe at Windsor, Conn.....	Ford, Buck & Sheldon, Inc., Consult. Engrs.
Michigan.....	Royal Oak.....	July 31 (re-advt.)..	Constrn. 5,000 lin. ft. 6, 8, 12 and 18-in. crock sewer.....	H. R. Brace, Vil. Clk.
Illinois.....	Flora.....	Aug. 1, 2 p.m.....	Constrn. sanitary sewers.....	W. A. Karr, Pres. Bd. Local Imp.
California.....	Sausalito.....	Aug. 1.....	Constrn. sewer system; cost, \$50,000.....	H. W. Chadwell, Town Engr.
Illinois.....	Aurora.....	Aug. 1 (about).....	Constrn. 2,000 lin. ft. 9-33-in. and 1 1/2 miles 9-33-in. vit pipe sewer	M. F. Tarble, City Engr.
Pennsylvania.....	Philadelphia.....	Aug. 2, noon.....	Constrn. sewers and furnishing triplex pump and accessories for sewage disposal works.....	M. L. Coole, Dir.
Michigan.....	Iron Mountain.....	Aug. 3.....	Constrn. 1,370 feet 48-inch concrete sewer, 1,900 feet 24-inch pipe, laterals, etc.....	Sol. Beauparlant, City Clerk.
Minnesota.....	Brainard.....	Aug. 5.....	Constrn. lateral sewers.....	V. N. Roderick, City Clerk.
Canada.....	Ormslow.....	Aug. 5.....	Constrn. sewer system, disposal plant and water works.....	J. G. Bryson, Village Clerk.
Ohio.....	Reading.....	Aug. 5.....	Constrn. sanitary sewer.....	W. F. Klopmeier, Clk.
Alabama.....	Mobile.....	Aug. 5, noon.....	Constrn. 22,000 ft. storm sewers.....	Board of Commissioners.
California.....	Santa Maria.....	Aug. 5.....	Constrn. 13,800 ft. 14 and 16-in. clay pipe sewer.....	City Trustees.
Tennessee.....	Tullahoma.....	Aug. 7, 2:30 p.m.....	Constrn. sewerage system and disposal plant.....	B. W. Wilkins, Chm. Comrs.
New York.....	Binghamton.....	Aug. 7, 4 p.m.....	Constrn. 2,683 ft. 30-in. and 8,645 ft. 27-in. pipe sewers.....	Bd. Contract and Sup., Binghamton; Bd. of Trustees, Lestershire.
New York.....	Schenectady.....	Aug. 7.....	Constrn. 23,000 feet 10 to 36-inch tile sewer.....	F. E. Johnson, Sec. Bd. Contract.
Idaho.....	Weiser.....	Aug. 9.....	Constrn. 48,500 ft. 6 to 24-in. sewers.....	S. H. Travis, City Clk.
Wisconsin.....	Londoo.....	Aug. 10.....	Constrn. sewers.....	C. J. Thompson, City Clk.
Pennsylvania.....	New Castle.....	Aug. 12, 8 p.m.....	Constrn. storm sewer.....	Perry Williams, County Clk.
Louisiana.....	Morgan City.....	Aug. 14, 2 p.m.....	Constrn. water works and sewerage.....	M. D. Shannon, Mayor.
Texas.....	LaGrange.....	Aug. 14, 8 p.m.....	Constrn. 28,000 ft. 6 to 10-in. clay pipe sewers, etc.....	H. W. Spreckles, Mayor.
Iowa.....	Dubuque.....	Aug. 24.....	Constrn. 7,000 ft. 8-in. sewers.....	City Clerk.
WATER SUPPLY				
North Dakota.....	Minot.....	July 29.....	Constrn. 3 miles of mains.....	E. J. Thomas, City Engr.
California.....	Los Angeles.....	July 29.....	Furn. riveted steel pipe, valves and specials.....	Board Public Works.
Ohio.....	Cincinnati.....	July 29.....	Furn. 475 tons CI water pipe and 5 tons specials.....	V. T. Price, Dir. Public Service.
Wisconsin.....	Tomah.....	July 29.....	Constrn. extension to water works.....	D. Crowley, Chair. Bd. Pub. Works.
New York.....	New York.....	July 29, 2 p.m.....	Laying water mains in number of streets.....	H. S. Thompson, Commissioner.
Pennsylvania.....	Harrisburg.....	July 30, 2 p.m.....	Constrn. 2 tanks, 85,000 and 300,000 gal. capacity, respect.	S. G. Dixon, Comr.
South Carolina.....	Columbia.....	July 30, 10 a.m.....	Constrn. coagulating basin at water works.....	F. C. Wyse, Engr.
North Carolina.....	Smithfield.....	July 31.....	Constrn. water works, sewer system and lighting plant.....	J. A. Wellons, Mayor.
Spain.....	Madrid.....	July 31.....	Constrn. filtration and purification plant.....	Canal Commission.
Iowa.....	Lima Springs.....	July 31, 8 p.m.....	Constrn. water supply plant and laying 600 ft. of 6 and 6,200 ft. of 4-in. water mains.....	M. B. Davis, Town Clk.
Illinois.....	Charleston.....	Aug. 1, 2 p.m.....	Constrn. reinforced concrete sedimentation and filter tanks, 1,000,000-gal. daily capacity.....	T. T. Shoemaker, Mayor.
Louisiana.....	New Orleans.....	Aug. 1.....	Constrn. reinforced concrete siphon.....	F. S. Shields, Sec'y.
Ohio.....	Payne.....	Aug. 1.....	Constrn. 19,000 ft. 4 to 8-in. mains, tank car & pump, mchy.	Edw. Wahl, Vil. Clk.
Missouri.....	Mountain Grove.....	Aug. 2, 4 p.m.....	Constrn. water works system.....	Hollen Kelley, County Clk.
Missouri.....	Bethany.....	Aug. 2.....	Constrn. water works imp'ts and extension; cost, \$25,000.....	Burns & McDonnell, Engrs.
Alabama.....	Dothan.....	Aug. 5, noon.....	Constrn. water works and electrical machinery.....	B. R. Pilcher, Chm. Comm.
Minnesota.....	Bemidji.....	Aug. 5.....	Constrn. 1,900 feet 4-inch pipe, etc.....	Geo. Stein, City Clerk.
New York.....	New York.....	Aug. 6.....	Constrn. blow-offs for steel pipe siphons.....	Chas. Strauss, Pres. Bd. Water Sup.
West Virginia.....	Parkersburg.....	Aug. 6.....	Constrn. 6,000,000 gallon reinforced concrete reservoir.....	Frank Good, City Clerk.
Idaho.....	Weiser.....	Aug. 9.....	Constrn. 45,000 ft. 4 to 16-in. mains, reservoirs, etc.....	S. H. Travis, City Clk.
South Carolina.....	Blackville.....	Aug. 20.....	Constrn. water wks, cost \$21,000; sewage system, cost \$12,000	J. N. Johnston, Engr., Florence.
Louisiana.....	New Orleans.....	Aug. 24, noon.....	Constrn. reinforced concrete siphon.....	F. S. Shields, Sec'y.
LIGHTING AND POWER				
Ohio.....	Columbus.....	July 29, noon.....	Furn. 122,000 lbs. No. 6 tripple-braid weather-proof wire and various lengths Idaho cedar winter-cut poles.....	S. Kinnear, Dir. Pub. Serv.
Nebraska.....	Marquette.....	July 29, 5 p.m.....	Constrn. electric light plant and water works.....	Bruce & Standeven, Engrs., Omaha.
West Virginia.....	Grafton.....	July 29, 8 p.m.....	Constrn. municipal electric light plant.....	W. C. Hanway, City Clk.
Massachusetts.....	Holyoke.....	July 29, 10 a.m.....	Constrn. underground conduits for municipal light system.	J. J. White, Mayor.
New York.....	Schenectady.....	July 31, 2:30 p.m.....	Constrn. electrical works, gas fitting, etc., to school building	F. E. Johnson, Sec'y Bd. Con.
North Carolina.....	Smithfield.....	July 31, 2 p.m.....	Constrn. electric light plant.....	Mayor.
Canada.....	Moose Jaw.....	Aug. 1.....	Furn. 500-kw. steam-driven generating set.....	City Commissioners.
New York.....	Buffalo.....	Aug. 5.....	Installing elec. light system at Block Rock Shiplock.....	U. S. Engr.
Canada.....	Canora, Sask.....	Aug. 5, noon.....	Constrn. crude oil engine elec. generator and equipment.....	H. M. Sutherland, Sec'y-Treas.
Indiana.....	Indianapolis.....	Aug. 15.....	Maintain, incandescent street lights for 5 years.....	Board Public Works.
Florida.....	St. Petersburg.....	Aug. 22, 7:30 p.m.....	Supply, city with gas.....	M. A. Fitzsimmons, Village Clerk.
Canada.....	Edmonton, Alta.....	Aug. 23.....	Constrn. gas plant.....	W. F. Devine, City Clk.
FIRE EQUIPMENT				
Indiana.....	Marion.....	Aug. 2.....	Constrn. fire station; est. cost, \$5,000.....	Board Public Works.
Michigan.....	Mt. Clemens.....	Aug. 5.....	Furn. 500 ft. fire hose.....	A. A. DeVanderer.
Pennsylvania.....	Sharon.....	Aug. 6, noon.....	Furn. automobile fire engine.....	O. J. Denny, Boro. Sec'y.
Mississippi.....	Moss Point.....	Aug. 6, 7:30 p.m.....	Furn. fire engine, 3 hose carts, 1,500 ft. 2 1/2-in. hose.....	C. M. Fairley, Clk.
BRIDGES				
Illinois.....	Farmer City.....	July 29, 10 a.m.....	Constrn. 7 reinforced concrete culverts.....	P. S. McBride, Township Clk.
Canada.....	Calgary.....	July 31.....	Constrn. 3 concrete bridges.....	J. M. Miller, City Clk.
Utah.....	Provo.....	July 31, noon.....	Constrn. concrete bridge.....	County Commissioners.
Mississippi.....	Batesville.....	Aug. 5.....	Constrn. steel bridge.....	Board of Supervisors.
Indiana.....	Brookville.....	Aug. 5.....	Constrn. bridge.....	C. G. Reiffal, County Auditor.
Indiana.....	Rensselaer.....	Aug. 5.....	Constrn. three steel and three concrete bridges.....	J. P. Hammond, County Auditor.
Pennsylvania.....	Waynesburg.....	Aug. 5.....	Constrn. concrete bridge.....	County Commissioners.
Florida.....	Tampa.....	Aug. 6.....	Constrn. retaining walls and bulkheads at bridge approach.	H. Guthrie, County Auditor.
New York.....	Auburn.....	Aug. 6, 8 p.m.....	Constrn. steel bridge over Owasco River.....	J. H. Hanlon, City Clk.
Indiana.....	Huntington.....	Aug. 7.....	Constrn. three concrete bridges.....	Board of Public Works.
Pennsylvania.....	Clymer.....	Aug. 7, 1 p.m.....	Constrn. double-arch reinforced concrete bridge.....	Commissioners.
Washington.....	Davenport.....	Aug. 8.....	Constrn. 3 steel bridges.....	County Commissioners.
Ohio.....	Columbus.....	Aug. 9.....	Constrn. reinforced arch bridge.....	County Commissioners.
Indiana.....	Lawrenceburg.....	Aug. 12.....	Constrn. two bridges.....	W. S. Fagaly, County Auditor.
Louisiana.....	Tallulah.....	Sept. 4.....	Constrn. 3 bridges.....	W. H. Harvey, Sec'y.
MISCELLANEOUS				
Dist. Columbia.....	Washington.....	July 29, 2 p.m.....	Furn. 1 motor car, gasoline type; exchange part payment Buick motor car, model F.....	C. H. Rudolph, Comr.
Pennsylvania.....	Chester.....	July 29, noon.....	Constrn. alterations to court house.....	County Commissioner.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK.	ADDRESS INQUIRIES TO
Illinois.....	Chicago.....	July 29, 11 a.m.....	Furn. 6,000 street signs, 5,000 brackets and 1,000 posts....	Ray Palmer, City Electrician.
California.....	San Bernardino.....	July 29.....	Furn. 600-gallon steel tank sprinkling wagon.....	S. D. Batchelor, City Clerk.
Indiana.....	Indianapolis.....	July 31.....	Constrn. ward building for hospital.....	Board of Public Works.
New York.....	New York.....	July 31.....	Constrn. section 1A, Lexington Ave, Rapid Transit R. R.	Public Service Commission.
New Jersey.....	Jersey City.....	Aug. 1, 2 p.m.....	Constrn. concrete bulkhead wall at penitentiary, Secaucus.	W. O'Mara, Clk.
Massachusetts.....	Malden.....	Aug. 1, 8 p.m.....	Furn. and placing several safes, iron work and steel shelving	S. A. Conner, Inspector of Bldgs.
New Jersey.....	Roselle Park.....	Aug. 2.....	Constrn. municipal building.....	Boro Council.
Mississippi.....	Batesville.....	Aug. 5.....	Furn. 1 or 2 cars metal culverts.....	County Supervisors.
Maine.....	Portland.....	Aug. 5, noon.....	Constrn. police station and jail work.....	O. C. Curtis, Mayor.
New York.....	Newburg.....	Aug. 6, 5 p.m.....	Constrn. public dock.....	D. J. Coutant, City Clk.
Connecticut.....	Bristol.....	Aug. 6, 8 p.m.....	Constrn. concrete retaining wall.....	P. B. Steele, City Clk.
Canada.....	Kirkfield Pk.....	Aug. 8.....	Constrn. incinerator.....	Frank Ness, Secretary-Treasurer.
Louisiana.....	New Orleans.....	Aug. 16, noon.....	Furn. one 40-ton & one 10-ton elec-operated traveling crane.	F. S. Shields, Sec'y.

STREET IMPROVEMENTS

Birmingham, Ala.—Committee composed of City Engineer M. G. Fitzpatrick, Samuel Parle and Chas. Thomas, will visit Cincinnati, Cleveland, Detroit, Chicago, St. Louis, Louisville, and perhaps elsewhere, with a view of selecting pavement for downtown streets of Birmingham.

Jasper, Ala.—Surveyors are locating route from Jasper via America, Parrish, Outerman and Corwin to the Fayette county line, Nashville, Tenn. City Park Commissioner is ready to extend boulevard across Shelby Park, when city and county agree to pay for their portion.

Selma, Ala.—Citizens of Dallas County are reported to have voted to issue \$100,000 bonds for road construction.

Talladega, Ala.—City voted \$25,000 bond issue to pave number of streets.

Globe, Ariz.—F. R. Goodrich, Assistant State Engineer at Phoenix, states that surveys are to be made immediately for the proposed State highway between Ray and Globe, a distance of 30 miles.

Whittier, Cal.—The Turnbull Canyon rd. about five miles long seems certain to be improved. City Engineer Wm. Tryce is making surveys.

Marysville, Cal.—Extensive street paving and parking will be done in Marysville immediately.

Alhambra, Cal.—City Attorney has been instructed to draft ordinance opening Marengo ave. through grounds of Ramona convent, to connect with Ross ave.

Los Angeles, Cal.—Bids for number of street improvements have been opened and will be awarded in day or two as soon as they have been tabulated by City Engineer. On Avenue Thirty-six, from Pasadena ave. to Carlotta boulevard, proposals for grading and graveling ranged from \$1.90 to \$3 a lineal ft. Bids for grading and graveling Cypress ave., from north city limits to Idell st., ranged from \$2.40 to \$3.75 a lineal ft. For grading and graveling Edgcliffe rd. from Franklin ave. to point 400 ft. northerly, bids were \$1.70 and \$1.85 a lineal foot.

Los Angeles, Cal.—Widening of West Fifth st. is being considered.

Los Angeles, Cal.—Extensive street improvements have been ordered and are in City Engineer's office awaiting legal opinions, or investigations as to profiles, grades, dedication and minor matters.

Sacramento, Cal.—One million two hundred thousand dollars worth of State highway bonds, in three parcels, out of \$2,000,000 worth, have been sold by State Treasurer E. D. Roberts as follows: E. H. Rollins & Sons, San Francisco, \$100,000; National Bank of D. O. Mills, \$100,000; Anglo, London and Paris National Bank, San Francisco, \$100,000; N. W. Halsey & Co., San Francisco, \$50,000, and a parcel of \$400,000 awarded on joint bid as follows: Anglo, London and Paris National Bank, \$150,000; National Bank of D. O. Mills, Sacramento, \$50,000; E. H. Rollins & Sons, \$50,000, and N. W. Halsey & Co., \$150,000. Money obtained from sale of bonds will be used in construction of State highways—first actual work—in Yuba, Marin, Menococino and Madera counties.

Sacramento, Cal.—Construction of macadam road, between Sacramento and Ione and Jackson is being considered.

San Francisco, Cal.—South of Civic Center Improvement Association have adopted plans for improving streets, sidewalks and crossings of district south of Market st. from Market st. to railroad tracks, and from east side of Fifth st. to west side of Twelfth st.

San Mateo, Cal.—Proposed system of boulevards which will be constructed by \$120,000 bond issue, was discussed at mass meeting held under auspices of

Board of Trade. Maps were presented showing plans of Supervisors as outlined in report of County surveyor James Neuman. With few alterations, sentiment of meeting was in favor of improvement.

Milton, Del.—Milton Council will take up proposition of having sidewalks paved with cement, town paying half of bill.

Wilmington, Del.—Levy court has voted to build road from Yorklyn to Ashland, from Mendin Hall Mills limestone road and a road in Blackburg connecting with State road.

Washington, D. C.—Preparations for the purchase of portable asphalt plant provided for in current District of Columbia appropriation act are being made by Engineer Department of District. It is proposed to have new improvement, which will be used only in repair of streets, installed here by September. Its cost is not to exceed \$7,500.

Washington, D. C.—Arrangements have been made by Col. Langfitt, Engineer Officer in charge of District water supply system, for surfacing and general improvement of Conduit rd., from Foxhall rd., just above Georgetown to Great Falls, distance of about 15 miles. Conduit rd. is built over conduit through which water flows from intake at Great Falls to city reservoirs.

Clearwater, Fla.—Pinellas County Commissioners contemplate construction of road from Clearwater to Largo, Fla.; county may vote on \$300,000 to \$500,000 bond issue.

Ocala, Fla.—City will pave portion of Fort King ave. with vitrified brick, about 11,950 sq. yds.

Tampa, Fla.—W. A. West, Chairman, Board of County Commissioners, favors brick for county roads.

Newnan, Ga.—Coweta County votes August 21 on \$300,000 bond issue for road construction.

Coeur d'Alene, Idaho.—City Council is planning to pave Fourth st., from Coeur d'Alene st. to the city line; Third st., from Lakeside ave. north to Coeur d'Alene, and Coeur d'Alene, from Fourth st. to Second, ten blocks in all, for which city's share will be \$10,000.

Indianapolis, Ind.—Resolutions have been adopted for improvement of Union and Michigan sts.

Michigan City, Ind.—City Engineer is preparing plans for brick pavements on Seventh, Eighth and Ninth sts. and Willard ave.

South Bend, Ind.—Petition for highway 80 rods in length and 40 ft. wide, built of macadam, has been filed before county commissioners.

Elizabethtown, Ky.—Hardin County will build 10 miles of metal roads, between Vine Grove and Big Springs.

Portland, Me.—Definite plan of road improvement in Portland and vicinity is likely to result from meeting of a committee of the Portland Board of Trade and the Maine Automobile Association in conference with Commissioner of Public Works Bion Bradbury. Among the important points settled was the immediate improvement of Brighton ave. to the Westbrook line and Auburn st., from a point beyond North Deering to the Falmouth line. It was also voted to petition the Governor for the improvement of the State highway between Portland and Biddeford.

Baltimore, Md.—Open competition for paving contracts in Baltimore has been assured at meeting of Board of Awards, at which it was decided, by vote of 3 to 2, to modify so-called "two-year clause," which prevented bids by new concerns. Question arose in consideration of Annex paving contract No. 10, on which Board decided to throw out all bids and to advertise again under new modified specifications.

Rockville, Md.—County Commissioners have sold to Riggs & McLean and Jenkins, Whedbee & Poe, of Baltimore, the \$47,000 of road bonds authorized by last legislature for improvement of roads from Rockville to Travilah, from Rockville to Potomac district line, from Kensington to the Georgetown pike, by way of Garrett Park, and from Forest Glen to Brookeville pike.

Boston, Mass.—New plans for widening of St. James ave., between Trinity pl. and Berkeley st., from 50 ft. to 70 ft. by city in conjunction with construction of extension of St. James ave. at width of 80 ft., from Berkeley st. into Park sq. lands and various other plans for development of the Park sq. lands by New Haven railroad, have been submitted to Mayor Fitzgerald.

Boston, Mass.—Plans for abolition of grade crossings on School, Elm, River and Union sts., Braintree, have been filed.

Worcester, Mass.—City Council has ordered paving of Salisbury st. with wood block; estimated cost, \$14,362.

Grand Rapids, Mich.—Carpenter & Anderson were low bidders on South Front ave. brick paving job with a bid of \$22,387, and will probably be awarded contract by Board of Public Works.

Duluth, Minn.—Board of Public Works has ratified action of Council in awarding contract for paving of East Fourth st., between Fourteenth and Twenty-third aves. east to P. McDonnell. The contract calls for sheet asphalt with sandstone blocks between and along tracks.

Hibbing, Minn.—County Commissioners will build road between Keewatin and Goodlands; cost, \$7,000.

Winona, Minn.—Winona County Board of Commissioners have formally approved plans and specifications drawn up by engineers from office of the State Highway Commission for construction of 16 miles of concrete highways under new Elwell law. Action will mean actual beginning of building of \$120,000 of new roads within month. Roads to be built according to plans adopted will be 16 feet wide. There will be center of concrete 8 ft. wide.

Pascagoula, Miss.—Good Roads Commissioners of Third District, F. H. Lewis, president, have asked Supervisors to issue \$25,000 bonds.

Stanberry, Mo.—City is considering bond issue for street and sewer system improvements.

Asbury Park, N. J.—Members of Ocean Boulevard Commission have decided to have Ocean boulevard continued from Rumson rd. to Asbury Park.

Elizabeth, N. J.—Ordinance has been passed to order and cause Orchard st., from Morris ave. to Magie st., to be repaved with brick pavement on concrete foundation. Also, Chilton st., from Rahway ave. to West Jersey st., to be paved with brick pavement on concrete foundation.

Jersey City, N. J.—Repaving bonds to amount of \$25,000 has been sold to bond firm of Ferris, White & Co., for \$105,012.

Passaic, N. J.—Ordinance has been adopted providing for curb, gutters, sidewalk and macadamizing of Highland ave. and other streets.

Albany, N. Y.—Bids for construction of improved highways, the cost of which will be in the neighborhood of \$6,000,000, will be received next month by the State Highway Commission. These contracts will be the final awards under the \$50,000,000 appropriation act. People of the State at the election in November will vote upon the proposition of expending

an additional \$50,000,000 for good roads.
Lockport, N. Y.—City Engineer has made plans for converting Market st. into a parkway in connection with projected State improvements which included a brick roadway.

Newburgh, N. Y.—State Highway Commission will receive bids for contracts for about \$6,000,000 of good roads construction in various parts of State. With these awards \$50,000,000 authorized to be expended for this purpose will be exhausted. At election next fall people will vote on proposition to expend additional \$50,000,000 for completion of proposed system of improved highways in this State.

Poughkeepsie, N. Y.—Paving of Mill st., from Garden to Hamilton st. with sheet asphalt, has been ordered.

Poughkeepsie, N. Y.—Common Council has passed a Washington st. improvement resolution over Mayor Sague's veto.

Schenectady, N. Y.—Ordinance has been adopted for grading, curbing and paving of the Plaza; also various other street improvements have been authorized.

Tupper Lake, N. Y.—Connecting link from the Tupper Lake-Moody rd. to Long Lake, will be built within the next year.

Utica, N. Y.—Mayor Baker has received communication from State Highway Commission, stating that improvement of highway leading from Herkimer County into this city by way of Broad st., has been approved. Division Engineer has been instructed to prepare plans for the work.

Bismarck, N. D.—City Commissioners have ordered grading of Avenue C, from Seventh st. to blocks 44 and 53, in Northern Pacific Second Addition. R. H. Thistlethwaite, City Auditor.

Cincinnati, O.—Ordinance for issue of \$500,000 bonds for resurfacing streets is pending.

Lisbon, O.—Bids will be received at office of County Commissioners until one o'clock p. m., August 5, 1912, for purchase of road bonds for said county in aggregate of \$43,430.93. P. R. Walker, Chief Clerk.

Altoona, Pa.—Various street improvements have been ordered.

Erie, Pa.—County Commissioners and Supervisors of Millcreek township have approved estimate for paving of East Lake rd., from city limits to Harbor-creek township line. Pavement will be of brick and will be continuation of East Sixth st. pavement to point beyond road turning into Grove House Park, from Lake rd., distance of more than three miles. Approving of estimate is preliminary and necessary step in undertaking of improvement, which will be commenced in time to be completed before fall. Estimate for paving of Albion rd., from borough of Albion rd., in Conneaut township, has also been approved, and bids for work will be advertised for without delay.

Erie, Pa.—Resolutions have been adopted for improvement of various streets.

Erie, Pa.—Ordinance for paving Newman st. is pending.

Harrisburg, Pa.—Mayor Royal has signed ordinance authorizing Highway Commissioner to purchase a 1912 Cadillac car for use of department, and also for paving a 15-ft. alley between Sixth and Jefferson sts., from Camp to Emerald.

Philadelphia, Pa.—Mayor Blankenburg has signed ordinance authorizing Department of Public Works to build a test service roadway of different paving materials on the Bensalem Pike for length of 750 ft.

Somerset, Pa.—State Highway Department engineers are hard at work resurveying Lincoln township section of Somerset-Jenners State road. Contract for construction of this section was awarded nearly three years ago to Altoona firm, but work was never taken up owing to death of head of firm.

South Bethlehem, Pa.—Finance Committee has sold \$42,000 worth of bonds for permanent street improvements.

York, Pa.—Edward S. Frey, assistant engineer for State Highway Department, has announced that bids will be requested within next few days for construction of new State road from end of Chanceford turnpike, south of Spry, to borough limit of Dallastown, and from south borough limit of Dallastown to Red Lion, in all a distance of about 8,300 ft. or almost a mile and one-half. This is on route No. 216.

Newberry, S. C.—City Council will shortly pave in front of old court house to Boyce st.

Chattanooga, Tenn.—Chattanooga paving bonds to amount of \$5,509.32 have

been sold to Seasingood & Mayer, of Cincinnati.

Lawrenceburg, Tenn.—Lawrence County votes October 5 on \$200,000 bond issue to construct macadam roads.

Fort Worth, Tex.—Resolution ordering Capps st., between College ave. and Evans ave., paved with bitulithic, has been passed.

Hillsboro, Tex.—Organization of automobile owners is being formed to promote construction of roads. Plans have already been adopted for roads from Hillsboro to Itasca, and from Itasca to Grandview.

Paris, Tex.—Commissioners Court has ordered election for August 17, to vote on issuance of good roads bonds to amount of \$100,000. If carried, proceeds will be used in constructing highway to county line where connection will be made with improved thoroughfare leading into Dallas.

Brigham City, Utah.—Road Commissioner Peice has recommended that county purchase concrete mixing machine.

Brigham City, Utah.—County will build half mile of cement road, between Tremonton and Garland.

Norfolk, Va.—Seventh Ward Local Board will arrange for sidewalk improvements and completing sewer system, at cost of \$40,000.

Spokane, Wash.—Sprague ave. paving project, planned to extend from end of present paving, at Lee st. to east city limits, which will cost \$69,000, has been adopted by City Council by approval of plans and specifications.

Spokane, Wash.—Estimates for different kinds of pavement for Seventeenth ave. are as follows: Asphalt, \$27,400; asphalt macadam, \$19,500; bitulithic, \$31,500; bitu-mass, \$21,800; concrete, \$26,500; granitoid, \$29,400; hassam, \$26,200; Spokane bituminous, \$22,900; wood blocks, \$40,000.

Morgantown, W. Va.—Court has authorized paving of Sabraton ave., and Putnam st., from city line to Hartman run bridge, and set aside \$9,000 for this purpose. They also ordered that \$1,000 be spent in improving creek road.

Madison, Wis.—Two million dollars' worth of State aid roads and bridges will be built in 1913.

Superior, Wis.—City Commission has ordered opening of Susquehanna ave., from Belknap to Winter st.

Milwaukee, Wis.—Use of granite, sandstone, brick or creosote blocks for all paving on streets laid with car tracks, is recommended by Public Works Commissioner Simmons. It is proposed to start work on downtown streets, embracing West Water, Second and Third sts., from Sycamore to Wells, and Grand ave., and Wells st., from Fourth st. to river.

Bellingham, Wis.—It is proposed to improve Central ave., from Holly to Laurel st.

Bellingham, Wis.—W. H. North, City Engineer, has estimated that it will cost \$14,500 to improve Meridian st., from Broadway to the northern city limits, using asphalt on a concrete base.

Madison, Wis.—Sum of \$2,000,000 will be expended on road work by State Highway Commission for next year.

CONTRACTS AWARDED.

Red Bay, Ala.—By Franklin County Commissioners, to Lawler, Vinson & Co., to grade, drain and surface with gravel $3\frac{1}{2}$ miles State aid road, from Red Bay toward Russellville.

Wetumpka, Ala.—By Elmore County Commissioners, to J. G. Brown, of Montgomery, to grade and gravel four miles State aid road; cost, \$8,000.

Argenta, Ark.—By City, to C. F. Turkis, of Little Rock, to pave block on Maple st., from Washington ave. to Second st.

Los Angeles, Cal.—By City for following improvements: Avenue Thirty-six, from Pasadena to Carlota, awarded to O. L. Stevens at \$2.10 a lin. ft. for grading and graveling; 33 cts. a lin. ft. for cement curb; 13 cts. a sq. ft. for cement gutter; 10.5 cts. a sq. ft. for sidewalk; aggregate, \$2,178.48. Cypress ave., from Idell st. to old north city boundary, awarded to Withers & Crites at \$2.40 a lin. ft. for grading and graveling; 32 cts. a lin. ft. for cement curb; 15 cts. a sq. ft. for cement gutter; 50 cts. a sq. ft. for granite block gutter; 11 cts. a sq. ft. for sidewalk; \$169 for culverts at Pepper st.; \$171 for culverts at Carlton st.; aggregate, \$15,404.11. Edgecliffe rd., from Franklin ave. to 400 ft. northerly, awarded to George E. Spain at \$1.70 a lin. ft. for grading and graveling; 7 cts.

a sq. ft. for regrading, graveling and oiling; 15.5 cts. a sq. ft. for cement gutter; 50 cts. a sq. ft. for granite block gutter; 35 cts. a lin. ft. for cement curb; aggregate, \$1,383.43. Twenty-fourth st., from Grand to Main, awarded to J. J. Papac at 33 cts. a lin. ft. for cement curb; aggregate, \$564.96. Washington st., from 190 ft. to 290 ft. east of San Pedro, awarded to O. L. Stevens at 13 cts. a sq. ft. for sidewalk; aggregate, \$78.

Los Angeles, Cal.—For construction of Chatsworth rd. to J. W. Polearo, at \$49,000.

Los Angeles, Cal.—By City as follows: Barlow st., from Cornwell to Soto, to Walter Overell, at \$3.25 a lin. ft. for grading and graveling; 37 cts. a lin. ft. for cement curb; 10 cts. a sq. ft. for cobble gutter relaying; 15 cts. a sq. ft. for vitrified block gutter relaying; 16 cts. a square foot for cement gutter; 11 cts. a sq. ft. for sidewalk; 55 cts. a sq. ft. for granite block gutters; 10 cts. a sq. ft. for regrading, graveling and reoil-ing; aggregating \$3,805.19. First st. (west) to Standard American Dredging Co., at \$4.95 a lin. ft. for grading West First st.; at \$5.95 a lin. ft. for grading D. E. F. G. H and I sts., and West Second, Third and Fourth sts.; aggregate, \$89,852.13.

Vernon, Cal.—To Fairchild, Gilmore, Wilton Co., at \$41,048.95 for improving Vernon ave., Jaboneria rd. and San Antonio ave. Work will require 192,180 sq. ft. of asphalt paving, 19,225 lin. ft. of cement curb, and 17,233 cu. yds. of grading. The paving will have a 6-in. concrete base, 1-in. binding course, and 2-in. wearing surface. Jos. A. Hurley, of Los Angeles, is City Engineer.

Beardstown, Ill.—By City for paving, to Bretz & Sons, Springfield, Ill., at \$22,000.

Marion, Ill.—By City for concrete sidewalks in District No. 2, to Wm. Lough & Son, of Marion, at \$21,246.

Milledgeville, Ill.—Duffy & Hubbard, Dixon, Ill., have been awarded contract to build 14 miles of hard road, at \$35,000.

Paxton, Ill.—To E. J. Westbrook, Paxton, at \$12,894, for paving East Paxton st.

Quincy, Ill.—By City to A. D. Thompson Co., Peoria, for 16,116.8 sq. yds. brick paving on a 5-in. concrete base at \$1.83 per sq. yd.; total cost, \$29,494. Other bidders: J. W. Turner Improv. Co., Des Moines, Ia., \$31,266; Henry Rees, Quincy, \$29,379; Ford Paving Co., Cedar Rapids, Ia., \$31,911; Jos. Eliff & Son, Quincy, \$29,184.

Winamac, Ind.—To Joseph Jeenkins, of Michigan, at \$12,900, for paving Logan st.

Bloomfield, Ia.—For paving with asphaltic concrete, to Western Improvement Co., at \$1.56 per sq. yd., who has transferred contract to Bryant Asphalt Paving Co., of Waterloo.

Farmons, Kan.—By City Council, to J. M. Guiles, at \$1,112.04, for pavement of alley in block 19.

Faducan, Ky.—By Board of Public Works to Yancey & Johnson, at \$3,179, for construction of concrete sidewalks.

Baltimore, Md.—By Board of Awards, as follows: Sheet Asphalt Contract No. 20, Filbert Paving and Construction Co., Fidelity Building, Baltimore, Md.; approximate bid, \$25,642.80; surface heater method. Vitrified Block Contract No. 24, P. F. Reddington, 321 St. Paul st., Baltimore, Md.; approximate bid, \$7,595.50. Granite Block Contract No. 25, John E. Quinn, 712 St. Paul st., Baltimore, Md.; approximate bid, \$18,885. Vitrified Block Contract No. 26, Martin J. Beach, 809 American Building, Baltimore, Md.; approximate bid, \$83,472. Granite Block Contract No. 27, John E. Quinn, 712 St. Paul st., Baltimore, Md.; approximate bid, \$56,546.50. Vitrified Block Contract No. 29, Cunningham Paving and Construction Co., 1345 Arch st., Philadelphia, Pa.; approximate bid, \$17,711.30. Granite Block Contract No. 30, P. F. Reddington, 321 St. Paul st., Baltimore, Md.; approximate bid, \$4,585.30. Vitrified Block Contract No. 33, Consolidated Engineering Co., Emerson Tower Building, Baltimore, Md.; approximate bid, \$24,597. Contract No. 28 was a small experimental contract. Contracts Nos. 31 and 32 will be awarded in the near future. Chas. A. Edel, secretary.

Pittsburg, Mo.—By City, for street paving: H. R. Nesch, of Pittsburg, to pave S. Broadway, from Quincy st. to city limits and E. Fourth st., from Elm to Smelter st., with brick; Gooch & Armstrong, of Vinita, Okla., W. Euclid ave., from Catawba to Georgia, with concrete; Thogmartin & Gardner, of Fort Scott, Kan., to pave Olive st., from First to Kansas and Euclid ave., from Broadway, 8,950 sq. yds., to Catawba, with brick,

and for curbs and gutters on S. Broadway.

South Omaha, Neb.—By City Council to Russell Condon, 1311 North Twenty-sixth st., South Omaha, at \$2,000, for 10,000 yds. of grading.

Bayonne, N. J.—By City Council, for improving Ave. E with asphalt, to Uvalde Asphalt Paving Co., at \$163,708. Other bids were: Warner-Quinlan Co., \$165,269; Sicilian Asphalt Paving Co., \$224,462.

Jersey City, N. J.—Contract for repaving Willow ave., between Thirteenth and Eleventh sts., has been awarded the Stanard Bitulithic Co. of New York.

West Hoboken, N. J.—Nolan & Hernung Construction Co., of West Hoboken, have been awarded contracts for paving with Mack vitrified block, Central ave., from Patterson Plank rd. to Union st.; 16,450 sq. yds.

West Hoboken, N. J.—Jos. Murphy & Son, West Hoboken, have been awarded contract for paving with Mack vitrified block, Smith st., from West st. to Railroad ave. 3,570 sq. yds.

Auburn, N. Y.—By Council, to Tine & Willey, Binghamton, for paving Fulton st., between East Genesee and Walnut sts., at \$8,223.

Auburn, N. Y.—By Council, to Brayer Bros., for paving Fulton st., between Franklin and East Genesee sts., at \$6,948.

Boonville, N. Y.—For paving main street of Boonville, to Patrick Mulderrey.

Oswego, N. Y.—Josh. H. Connors Construction Co., Fulton, which was awarded contract for building Sterling-Southwest Oswego highway has sublet the work to John Henrick, city.

Rochester, N. Y.—By Board of Contract and Supply, for paving Parkway with brick, to Thos. Holahan, at \$19,903. For brick paving in Lewis st., to H. N. Cowles, at \$4,700.

Rochester, N. Y.—By Board of Contract and Supply, to Julius Frederick Co., for asphalt pavement on Woodman rd., at \$36,998; for cement sidewalks, to Passero & Petrossi, at \$2,670; for grading walks in Chapin st., to John Pelinski Co., at \$2,632.

Schenectady, N. Y.—By Board of Contract and Supply for laying concrete sidewalks on Seneca st., from Van Vranken ave. to New York Central tracks, to C. D. Lewis, of this city. There will be 5,100 sq. ft. of sidewalk and 5,100 sq. ft. of sub-base. Lewis bid 10 cts. a sq. ft. on sidewalk and 1 1/2 cts. a sq. ft. on sub-base, total of 11 1/2 cts. a sq. ft. P. Camillo & Co. bid 12 1/2 cts. a sq. ft. for walk and 1 1/2 cts. a sq. ft. on base. Bruno Timpoly, 17 cts. on the sidewalk and 2 cts. on base. J. C. Connors, 22 cts. on sidewalk and 4 cts. on base. W. D. Goodale, 16 cts. on sidewalk and 2 cts. on base. Sidewalk is to be 5 ft. wide and 4 in. thick, being composed of 3/4 in. of concrete and a 1/4-inch finishing course of cement mortar. Sub-base must be 9 in. thick, of clean, hard cinders, slag or gravel.

Utica, N. Y.—Contracts for laying about 11,000 sq. ft. of cement sidewalks in various streets in city have been awarded to N. D. Peters Co. and James F. O'Connor by Board of Contract and Supply. Contracts include laying of about 40 sidewalks, and prices range from 14 to 20 cts. per sq. ft. Mr. O'Connor received contracts for laying walks on Tilden ave., South st., Lincoln ave. and Eagle and James sts. N. D. Peters Co. was awarded contracts for laying walks on Ontario and Niagara sts., Conklin ave. and West, Cahal and Catherine sts.

Caldwell, O.—By State Highway Department for grading and paving with brick, Caldwell-Carlisle rd. State Highway "C" petition No. 531, in Olive township, length 5,302 ft., or 1 mile to Abner Jumper, Nelsonville, O., at \$16,500. James R. Marker, State Highway Commissioner.

Cincinnati, O.—By Board of Control, for improving Harriet st., from Budd to Clark, to Henkel & Sullivan, at \$24,720.

Dayton, O.—By Service Director Hogen, for paving Forest ave., to David Beard, at \$21,803 and \$21,582 for two sections, respectively. W. J. Kernon Co. bid \$22,293 and \$22,126. Kernon represents the Republic Creosoting Co., of Indianapolis, and David Beard represents the Cincinnati Compressed Wood Preserving Co.

Marietta, O.—By County Commissioners, to Cislser & Morse, city, for paving with bituminated concrete one mile of road at \$12,125.

Newark, O.—By State Highway Department, for grading and paving Newark-Granville Extension road, State Highway "F" petition No. 432, length 20,690 ft., or 3.92 miles, to Gregg & Fletcher, Zanes-

ville, O., at \$40,670. James R. Marker, State Highway Commissioner.

Salina, O.—By County Commissioners, to G. H. Heffner & Sons, for paving with concrete the reservoir road, 1.6 miles long, at \$12,880.

Youngstown, O.—By Service Director, for paving Woodland ave., from South ave. to Pine st., to Charles Harris, at \$5,531.10; Penn ave., Himrod to Oak, \$3,309.80; Fruit st., Himrod to Sheehy, Youngstown Construction Co., \$3,426.50; Lakeview ave., Mahoning to Olson, Turner & Olson, \$5,114.25; Portland st., city lot 17,617 to Mahoning ave., Turner & Olson, \$6,221; Prospect st., Himrod to Oak, James McCarron, \$7,892; Eagle and Caldwell sts., James McCarron, \$5,980.60; Chalmers ave., Hillman to Garlic, Chas. Harris, \$5,670.90.

Oregon City, Ore.—To Oregon Engineering and Construction Co., for macadamizing John Quincy Adams st., from Eighth to Fourteenth; Jackson st., from Twelfth to Sixteenth, and Sixteenth st., from Division to Jackson.

Ambler, Pa.—By County Commissioners to Willauer & Co., of Pottstown, for rebuilding Butler turnpike, near Ambler.

Brookville, Pa.—By State Highway Department to South Shore Construction Co., Erie, Pa., at \$53,116.39, for constructing road in Jefferson County.

Hanover, Pa.—M. J. Malloy, of Sugar Notch, has been awarded a contract for the paving of Main st., from Hanover Township line to Caestnut st., with Mack vitrified block; 10,500 sq. yds. Harrison & Butts, Wilkes-Barre, are engineers.

Harrisburg, Pa.—By Councils, to Central Construction Co., for paving about 14 miles of streets at prices ranging from \$1.79 to \$1.94 per sq. yd. and 80 cts. to 85 cts. for curbing.

Sharon, Pa.—For building new section of road from Continental Hill to Excelsior, to William Taby.

Steelton, Pa.—By City Council, to Delaware Contracting & Construction Co., Chester, for paving Harrisburg st. and Pine st. with amesite, at \$1.87 per sq. yd. Other bidders: John W. Cassel, \$1.99, for asphaltic concrete, and Standard Bitulithic Co., at \$2.03 for Warrenite. Two jobs comprise 6,600 sq. yds.

Sunbury, Pa.—By State Highway Department, Edw. M. Bigelow, Commissioner to Monroe Paving Co., Langhorne, Pa., at \$142,573.14, for constructing road in Northumberland County.

York, Pa.—By City Highway Committee, to pave four blocks of East Market st. about 9,500 square yds. of sheet asphalt, to Central Construction and Supply Co., of Harrisburg, at its bid of \$1.80 per square yd. Only other bidder was Barber Paving Co., of Philadelphia, whose bid was \$1.87.

Memphis, Tenn.—By City Commissioners, to Memphis Asphalt Paving Co., at \$16,420, for paving Bellevue blvd., from Madison ave. to Lamar ave., with asphalt, and at \$5,613, for paving Linden ave., from Main st. to Fourth st., with asphalt.

Morristown, Tenn.—By Hamblen County Commissioners, to J. A. Webb, of Nashville, Tenn., to build and repair roads; \$25,000 bond issue voted.

Fort Worth, Tex.—By City Commission to Rudolph S. Blome Co., of Chicago, Ill., to pave 2.6 miles on 25th st., from N. Main st. west to city limits on Rosen Heights with granitoid.

San Angelo, Tex.—For paving of approximately 23,000 sq. yds. with creosote blocks, to M. A. Moon, by City Council, at \$2.56 per sq. yd.

Seattle, Wash.—By Board of Public Works as follows: Whatcom ave., paving, to Sparger Concrete Co., brick paving, \$239,821.96. Dose Terrace, paving, to De Flong & Heltborg, \$6,576.75. East Alder st., concrete walks, to D. H. Traphagen, \$6,893.50. Nickerson st., grading, etc., J. A. Zinkan, \$2,798.30. Twenty-fourth ave., paving, to P. J. McHugh, \$53,294.67. East Howell st. paving, to De Flong & Heltborg, \$26,676.10.

Wheeling, W. Va.—By Marshall County Court for 3,000 sq. yds. of hard surfacing of Green Valley rd., in Caeron district, to R. J. McFadden.

Janesville, Wis.—By Council, to John F. Icke, Madison, for paving Fulton and Henry sts. with macadam asphalt binder.

Milwaukee, Wis.—By County Board Committee on Bridges and Railroads as follows: Watertown Plank rd. from Milwaukee, to Wauwatosa to J. Rasmussen & Son Co., concrete pavement, 40 cts. a cu. yd.; grading, 49 cts. a sq. yd.; 2,000 yds. of sandstone, at 80 cts. a sq. yd. Mukwonago rd., E. C. Blake Co., concrete pavement, 31.9 sq. yds.; grading,

47 cts. a cu. yd., from Oklahoma ave. to West Allis.

South Milwaukee, Wis.—To James Cape & Sons Co., Racine, Wis., at \$25,000, for paving two of main streets of South Milwaukee.

SEWERAGE

Daytona, Fla.—Ordinance bonding city for \$100,000 for sewerage system passed two readings and was referred back to Ordinance Committee for correction.

Quincy, Ill.—Board of Local Improvement has passed a resolution, providing for the construction of the South Side Sewer District, to cost about \$77,000.

Hobart, Ind.—Plans have been prepared for construction of a sanitary sewer system in Hobart; estimated cost, \$60,000.

South Bend, Ind.—Board of Public Works has confirmed resolution for construction of Bowman Creek sewer; cost about \$150,000.

Burlington, Ia.—Resolution has been passed, ordering sewer in Aetna st., from Stony Lonesome sewer to Marshall st.

Kingsley, Ia.—Election will be held August 5, for voting on issuance of bonds for sewer system.

Wichita, Kan.—Bert C. Wells, City Engineer, estimates cost of constructing a storm water sewer from Meridian ave. to Arkansas river, at about \$45,000.

Bowling Green, Ky.—City Council will consider ordinance providing for \$300,000 bond issue to construct sewer system.

Morgan City, La.—Bids will be opened shortly for furnishing material for building of \$80,000 sewerage and water works system.

New Albany, Miss.—City retained Richard C. Huston, Exchange Bldg., Memphis, Tenn., to prepare plans for 4- or 5-mile sewer extension.

Stanberry, Mo.—City is considering bond issue for sewer system and street improvements.

Dillon, Mont.—City Council has decided to construct sewers in District No. 5 at a cost of \$9,859.

Elizabeth, N. J.—Ordinance has been passed to build and construct sewer, together with house drainage connection, in Princeton rd., from south side of Park ave. to north side of Westfield ave., and to cause pipes of sufficient size to be laid therein to drain said district. Edward Nugent, President of City Council.

Faterson, N. J.—Following sewers are to be constructed; in Preakness ave., between Maple st. and Totowa ave. In East twenty-fourth st., between Fifth ave. and Sixth ave., and through Sixth ave. to Madison ave. In Cliff st., between Oxford st. and North Third st. In Hillman st., between East Main st. and the Passaic river. In Knickerbocker ave., from Paxton st. to Hazel st., through Hazel st. to Dey st., through Dey st. to Dakota st., and through Dakota st. to Gould ave. In Crooks ave., between Main st. and Hazel st. In East Fifteenth st., between Sixth ave. and Lyon st. In Alabama ave., from No. 93 Alabama ave. to Wabash ave., through Wabash ave. to Maryland ave., and through Maryland ave. to Trenton ave. In East Main st., between North Strait st. and the Passaic river. In Fulton st., between York ave. and East Eighteenth st. In Carbon st., from lot No. 164 Burhans ave. and New Burhans ave., to connect with the present sewer in Jefferson st.

New Hartford, N. Y.—Notice is given that A. P. Seaton, Supervisor, will sell at public auction, to highest bidder, at Butler Hall, in village of New Hartford, on July 25, 1912, at 10 o'clock, bonds of par value of \$44,000, for constructing sewer in Sewer District No. 1.

Saranac Lake, N. Y.—R. F. Rely, New York, was low bidder for five miles of sewers, at \$36,625.

Schenectady, N. Y.—City Engineer W. T. Wooley has completed plans for 4 1/2 miles of tile sewers 12 to 36-in. in diameter to drain Gilderland ave.

Dunn, N. C.—City votes August 1 on \$50,000 bond issue to construct sewer system.

Elyria, O.—City Council is taking steps toward the construction of sanitary sewers in several streets of Elyria.

Skiatook, Okla.—Bonds to the amount of \$9,000 have been voted for constructing a sewer system at Skiatook.

Chester, Pa.—Sewage system which provided for suburban outlet into large mains which carry off waste material of this city, is being discussed.

Chester, Pa.—Ordinance has been adopted for construction of sewer in middle of bed of Second st., from bottom of manhole at Second and Green sts., to Second and Market sts., in borough of Marcus Hook. R. L. Elliott, President of Council.

Sharon, Pa.—Plans are being discussed for new sewage disposal plant.

Sharon, Pa.—Word has been received from Harrisburg that borough has been granted permission to extend sanitary sewer along five highways. Total of 2,700 ft. of pipe will be laid.

Glenolden, Pa.—Citizens are reported to have voted to issue \$7,000 bonds for a sewer extension, and \$20,000 for improvement of highways.

Meyersdale, Pa.—L. E. Chapin, of Pittsburgh, is preparing preliminary plans for a sewer system and sewage disposal plant.

Scranton, Pa.—Plans for bond issue totaling more than \$200,000 for construction of sewer systems and relief sewers have been made, and Chief Engineer W. A. Schunk, of Bureau of Engineering, was directed to prepare plans for following sewer systems: Relief sewer in Fourth district, Phelps st. in Seventh Ward; estimated cost, complete, \$83,400. Relief sewer on Linden st. and Washington ave., to drain cellars of central city business places; total cost, \$70,000, of which \$30,000 was obtained by a bond issue of 1900. System of sewers in Twenty-first Ward, extending from Tripp Park section to Diamond ave. and thence to the river; estimated city's share, \$40,000. System of sewers in Twenty-second Ward, extending from the westerly end of that ward to the Lackawanna river; city's share estimated at \$40,000.

Woonsocket, R. I.—Contract will soon be let for sewers in Winter st., and on Woodland and Glen roads.

Greer, S. C.—J. B. McCrary Co. of Atlanta, Ga., are engineers for the proposed sewer system, to cost \$17,000.

Bartlett, Tex.—Plans are being prepared for the construction of a sewer system.

Jefferson, Tex.—Jefferson Sanitary Sewer Co. will construct a sewer system.

Yokum, Tex.—Election will be held August 15, for voting on question of issuing \$32,000 bonds for constructing sewer system.

Abingdon, Va.—New sewerage system will be installed at cost of \$35,000.

Cathlamet, Wash.—City Council has decided to construct an extension to the sewer system.

Spokane, Wash.—Plans have been submitted to City Council for the construction of a sub-trunk sewer in Union Park; estimated cost, \$17,784.

CONTRACTS AWARDED.

Bridgeport, Conn.—By Board of Public Works, for constructing sewer in Fairfield ave., from Broad to Courtland st., to Pierce Manufacturing Co., at \$5.70 for 20-in. and \$6.98 for 30-in. For Maplewood ave. sewer, to the Burns Co., at 50 cts. per ft.

Gary, Ind.—By Board of Public Works, for construction of Sewer No. 10 in Tolleston st., to M. W. Holben, at \$5.237.

Hammond, Ind.—By Board of Public Works to Calumet Sewer Construction Co., city, for sewer construction and house connections in Michigan ave., Truman and Indiana ave.

Thorntown, Ind.—By Town Board of Trustees to Geo. T. Miller, Lebanon, Ind., at \$4,059.49, for construction of three separate sanitary sewers.

Cedar Falls, Ia.—To Black Hawk Construction Co., of Waterloo, for 4,350 feet of sanitary sewer, at \$3,396; Philo Smith, \$3,570; Dearborn Construction Co., \$3,976; W. D. Yeager, \$3,572; M. A. Camery, \$3,645; Hoar & Parkinson, \$3,613.

Holstein, Ia.—To J. W. Turner Construction Co. of Des Moines, for construction of sewer system.

Oskaloosa, Ia.—By City Council for sewer improvements amounting to over 4 miles of new sanitary sewer, to H. J. Cathers, of Omaha, Neb., at \$16,323.10.

McPherson, Kan.—To McElvain & Ramsey, for constructing a district sewer here at the following bid: Fifteen-in. vitrified pipe laid, 36 cts.; 12-in. vitrified pipe laid, at 28 cts.; 10-in. vitrified pipe laid, at 21 cts.; 8-in. vitrified pipe laid, at 15½ cts. Prices on pipe includes Y junctions. Flush tanks, at \$55; man-holes, at \$27.50; lamp-holes, at \$6; concrete, at \$8. Excavation and back filling under 4 ft., per ft., 8 cts.; between 4 and 6 ft., 12 cts.; between 6 and 8 ft., 17 cts.; between 8 and 10 ft., 25 cts.; between 10 and 12 ft., 33 cts.; between 12 and 14 ft., 45 cts. Total bid, \$19,190.80. Total other bids: Tonkawa Construction Co., Tonkawa, Okla., \$22,333.20; Lyon & Peterson, Salina, Kan., \$23,504.40; Marshall Bros., Los Animas, Col., \$31,692.80; Chas. T. Derr, Oklahoma City, Okla., \$20,655.95; McGwire & Stanton, Leavenworth, Kan., \$22,302.60; R. J. & W. M. Boyd Construction Co., Kansas City, Kan., \$29,962.80; E.

M. Eby, Wellington, Kan., \$19,943.40; A. J. McKinzie, Webb City, Mo., \$22,900. H. A. Rowland, City engineer.

New Orleans, La.—By Sewerage and Water Board, to Hampton Reynolds, 782 Birch st., at \$416,199, for construction of Metairie levee and Broad st. canal.

Baltimore, Md.—By Board of Contract and Supply, to C. B. Clark & Co., 1808 Greenmount ave., at \$103,316.45, to construct storm water drains, Contract No. 21, and to William McCarthy & Co., 121 Pearl st., at \$65,183.55, to construct sanitary connections across footways in Districts Nos. 29 and 30.

Kansas City, Mo.—By Commissioners, for construction of sewers and catch basins, to W. C. Mullins, city, at \$17,346.

Perth Amboy, N. J.—By Council, to Christian Petersen, for constructing sewers on a number of streets.

Niagara Falls, N. Y.—Bernard Martin was low bidder on Twenty-fourth st. sewer. Bids for work were submitted to Board of Public Works. Martin's bid was \$39,461.50, just \$13.50 under that of W. H. Cookman. The Read-Coddington Co. was only other bidder on contract.

Rochester, N. Y.—By Board of Contract and Supply, for sewer work at Exposition Park, to A. Brotsch, at \$10,257.

Saranac Lake, N. Y.—By Sewer and Water Board, for 54,000 ft. of 6- to 15-in. vitrified pipe sewers, to William S. Ames, Saranac Lake, at \$41,974. Other bids were: John B. Dower, Ballston Spa, \$41,136; Crandall Engineering Co., East Boston, Mass., \$42,002; and Thomas & Swift, Syracuse, \$54,671.

Watervliet, N. Y.—By Board of Contract for constructing a sanitary sewer in the first ward, to start from Hudson river, along Eighth st., to the western line, to Wm. King & Co., at \$16,900.

Canton, O.—By City for the construction of Saxton st., Hahn alley and Orchard st., storm sewers, to Thos. Chapman, of Lorain, at the following bid: 7-ft. brick sewer—1,820 lin. ft. 2-ring brick, \$9.95 640 lin. ft. 3-ring brick, \$12. Vitrified pipe sewer—100 lin. ft. 4-in. house connection, relaid, 75 cts.; 250 lin. ft. 24-in. pipe, \$1.40; 385 lin. ft. 15-in. 95 cts.; 8-in. pipe relaid, 250 lin. ft., \$1.20; 192 lin. ft. 8-in. c.l. pipe, \$3; 1 track drain, \$7; 2 side inlets, \$15; 27 catch basins, each, \$35; 11 manholes, each \$40; 1 M ft. sheeting, \$20, 1 M ft. piling, \$40; 10 cu. yds. ledge rock, \$4.50; total, \$28,983. Totals of other bids: Wise, Smith & Krabill, Canton, \$30,170; F. A. Downs Const. Co., Canton, \$30,068; L. D. Burd, Canton, \$3,578.

Muskogee, Okla.—By City Council, for construction of sewers in Sanitary District No. 79, to the Wells-Franklin Construction Co., at \$12,300.

Erie, Pa.—Three contractors competed in the sewer bidding July 16. Joseph McCormick & Bro. took three of the four jobs on lowest figures. Edward Driscoll was lowest on the 9-in. sewer in Brandes st., from 26th st. southwardly 210 ft., his price being \$1.10 a ft., compared with \$1.35 by McCormick's and \$1.65 by Clements Wolfgram. The 15-in. sewer for East avenue, from 26th to 28th sts., went to McCormick on a bid of \$1.47 a ft., with Contractor Driscoll bidding \$2.25. The 9-in. sewer in Wallace st., from 23d to 24th st., brought 75 cts. a ft., and in Perry st., from 23d st. southwardly 200 ft., went at 90 cts. for 9-in. pipe, and 40 cts. for 6-in. pipe, the successful bidders being the McCormicks. Driscoll also bid 90 cts. on 9-in. pipe, but was up to 50 cts. on the 6-in. pipe.

Chattanooga, Tenn.—By Board of Public Works, for four miles of sewers to be laid in Highlands and Normal Park, to the Noll Construction Co., Chattanooga.

Fort Worth, Tex.—By Commissioners, for construction of a sewer in Jarvis st., to F. A. Johnston, at \$5,168.

Chase City, Va.—By Town Council, to John B. McCrary Co., Atlanta, Ga., for constructing water works and sewerage, at \$45,000.

Cudahy, Wis.—By City to R. Hildebrand, Milwaukee, at \$42,000, for 1,970 ft. 8-in vitrified pipe; 2,800 ft. 36-in. and 2,600 ft. 48-in. concrete sewers.

La Crosse, Wis.—To Olaf Swennes for number of small sewers, at \$15,365.

WATER SUPPLY

Louisville, Ala.—Town contemplates construction of water works.

Montgomery, Ala.—City will lay an 8-in. main on Madison ave.

Heber Spring, Ark.—Dickinson & Watkins, State Bank Bldg., Little Rock, Ark., are preparing plans for a water system here.

El Centro, Cal.—Citizens will vote on a bond issue of \$40,000 for extending

water works, including 5½ miles of 4-inch pipe; 1 mile of 8-inch pipe and 50 new fire hydrants.

Escondido, Cal.—City contemplates constructing municipal water works. Several test wells will be driven at once.

Fullerton, Cal.—An election will soon be called for the issuance of \$80,000 of bonds for the construction of a water works system.

Hawthorne, Cal.—Hawthorne Water Co. will lay 3½-in. mains on several blocks.

Riverside, Cal.—A valuation of the three privately owned water works plants is being made and a bond issue of approximately \$1,000,000 will be made covering the purchase and improvement of the works. Plans for the improvements are now in progress, which will consist of additional pipe lines, reservoirs and pumping plant. Burns & McDonnell, Engineers.

San Jose, Cal.—City has promised to co-operate with San Francisco and other Bay cities in securing for future water supply use of Hetch-Hetchy Valley.

San Pedro, Cal.—San Pedro Water Co. has been ordered to lay a 3-in. pipe on Bayview ave.

Fort Meade, Fla.—Bonds for \$39,000 have been voted for extending the water and sewer systems.

Wrens, Ga.—The J. B. McCrary Co., of Atlanta, are engineers for improvements contemplated to water works; probable cost, \$12,000.

Moscow, Ida.—City Council has appropriated \$15,000 for new water mains.

Morton, Groves, Ill.—A new water works will be constructed, including a deep well pump, engines and a 120-ft steel tower.

Elkhart, Ind.—Water company has been ordered to lay mains on several streets.

Michigan City, Ind.—Sum of \$1,500 has been appropriated for extension of water main.

New Castle, Ind.—Superintendent of Water Works Price has recommended that a large pump be purchased.

Gilman, Ia.—Sum of \$12,000 has been voted for municipal water works system.

Macedonia, Ia.—Special election has been held to vote on question of bonding town for \$8,000 for construction of water works system. Proposition carried by almost unanimous vote.

Murray, Ia.—Water works system will probably be installed here.

Morgan City, La.—Bids will be opened shortly for furnishing material for building of \$80,000 water works and sewerage system in this city.

Gloucester, Mass.—Water commissioners have voted to lay surface pipe to Story estate on Traverse st.

Russell Mass.—Town has voted to issue \$25,000 bonds to extend the water mains.

Lansing, Mich.—Water Commissioners have voted to lay an 8-in. main on Michigan ave.

Newaygo, Mich.—Newaygo Engineering Co. is preparing plans for a water works system.

Scio, Miss.—Town contemplates the installation of a water system to supply a population of 1,000, and is seeking estimates on construction.

Billings, Mont.—Plans have been completed for new water works improvements. Valuation placed on the property of the Billings water plant, \$256,000; estimated cost of improvements, \$190,000. Plans have been completed for complete new municipal plant at an estimated cost of \$700,000. Bond election will be called within the next few weeks.

Oconto, Neb.—City Council will soon vote on question of water works.

Rising City, Neb.—Bids have been asked for the installation of a water and light plant.

Morrisville, N. J.—Water Committee has been authorized to issue specifications and ask for bids at water works for retaining wall.

Pitman, N. J.—Committee of Pitman Citizens' Association is preparing a report of investigation of data upon question of municipal ownership of water system.

Brockport, N. Y.—Election will be held July 30 to vote on establishing municipal water works at estimated cost of \$275,000. Witmer & Brown are the Village Engineers.

Carthage, N. Y.—New State dam is to be built at Carthage to replace present structure.

Fulton, N. Y.—City officials favor connecting Keller and Johnson springs; estimated cost, \$50,000.

Marlborough, N. Y.—Taxpayers have voted to purchase water works at cost of \$30,000.

Saluda Springs, N. C.—A water works system and a sewage disposal plant will be built.

Chamberlain, N. D.—City has sold \$18,000 bonds for water works, which will draw supply from Missouri river.

Devils Lake, N. Dak.—City Council has granted 30-year franchise to F. E. Carson, of Fargo, for telephone, water, light and gas privileges. Company named Western Development Co. will be formed to build \$60,000 light plant.

Alliance, Ohio.—City has disposed of \$140,000 water improvement bonds, and will soon ask bids for extension of water works.

Cincinnati, O.—Mayor Hunt will ask Council for \$8,000 to make survey for proposed high pressure water main system for fire protection.

Dayton, O.—Certain obstacles regarding the extension of water works system are said to have been removed after conference between State Board of Health and City Engineer Cummins.

Springfield, Ohio.—Superintendent of Water Works George Cotter, has recommended that city purchase new pump and lay mains, costing about \$175,000.

Indiana, Pa.—Clymer Water Co. have completed plans for dam and reservoir to hold several million gallons.

Coal Creek, Tenn.—Coal Creek Water Co. will expend about \$10,000 on construction of gravity water system of about 75,000 gals. daily capacity; reservoir, concrete masonry; cost about \$1,000.

Pecos, Tex.—City Council at joint meeting with Commercial Club are discussing water works.

Sulphur Springs, Tex.—City will construct pumping station on White Oak Creek and locks and dams to impound 10,000,000 to 20,000,000 gals. water; from White Oak Creek water will be piped through 8-in. main to Lake Coleman, in city limits, capable of holding 20,000,000 gals.; \$30,000 bond issue voted.

Winnabow, Tex.—City voted \$23,000 bond issue to construct water works.

Milton, W. Va.—Election for \$10,500 bonds for water works carried July 15.

Bowlesburg, W. Va.—Citizens on July 6, voted to issue \$11,000 bonds for the construction of water works.

Wausau, Wis.—Citizens have petitioned City Council to lay water mains on Weston and other streets.

Ottawa, Ont.—City has voted to issue \$66,500 bonds for water works extension.

CONTRACTS AWARDED

Manitou, Col.—By City, for construction of a dam, to J. J. Cook, Denver. Contract includes about 4,000 cu. yds. of concrete and 30,000 cu. yds. of excavation.

Washington, D. C.—By Commissioners for furnishing c. i. water pipe, to the Camden Iron Works, of Philadelphia, Pa.

Bedford, Ind.—By City for reinforced concrete sedimentation basin for water works, to Ewing Shields, Seymour, at \$16,300; motor and pumps, to Dravo-Doyle Co., of Pittsburgh, Pa., at \$7,700.

West Bridgewater, Mass.—By Town, to Central Foundry Co., for furnishing 12,000 ft. 4-in. Universal cast iron pipe for water extensions.

Biloxi, Miss.—By Council, for water system, to Cooper-Greer Co., Gulfport, Miss., at following prices: Laying 16,000 ft. of 4-in. pipe, 15 cts.; laying 42,000 ft. of 6-in. pipe, 17½ cts.; unloading and distributing 900 tons material, \$2; setting 115 fire hydrants, with foundations, \$3; setting 120 4- and 6-in. valves and valve boxes, 50 cts.

McCook, Nebr.—To L. G. Mehaffey, at \$3,350, for construction of water pipe line.

South Orange, N. J.—By Village Trustees, for building 2,000,000-gal. concrete reservoir, to Deltz Engineering Co., New York, at \$24,000.

Wolcott, N. Y.—By City, for furnishing two electrically driven power pumps for the water system, to Fairbanks, Morse & Co., Cleveland, O., and to erect a standpipe, to Conery & Co., Philadelphia, Pa.

Fargo, N. D.—To Haggart Construction Co. for installation of water main in Ebert court, at \$1.25 per lin. ft., with hydrants at \$70 each.

Wahpeton, N. D.—For construction of concrete reservoir for water works, to Hopeman Construction Co., Moorhead, Minn., at \$11,473.

Cleveland, O.—By District Public Service, for installing four pumping engines, to Allis-Chalmers Co., Milwaukee, Wis., at \$48,000.

Tarentum, Pa.—By Town, for constructing a 300,000-gal. tank for the water system, to Des Moines Bridge & Iron Co., Des Moines, Ia.

Ethan, S. D.—To F. Bruce, of Yankton, for water works system, at \$8,700.

Pt. Bliss, Tex.—T. McLee has secured contract for sinking wells, furnishing pumps, etc., for \$12,500.

Kenosha, Wis.—To Chas. Payne, of Waukegan, Ill., for proposed concrete settling well, at \$6,596.

LIGHTING AND POWER

Louisville, Ala.—Town contemplates improving electric light system.

Hartford, Conn.—Hartford Business Men's Association has recommended Council to place three cluster lights at a number of intersections.

Wilmington, Del.—Wilmington & Philadelphia Traction Co. contemplates the extension of the ornamental lighting system in Wilmington.

Abbeville, Ga.—G. W. Mixon will rebuild electric light and power plant burned at loss of \$5,000.

Columbus, Ind.—Interstate Electric Co. has applied to City Council for a franchise to construct transmission lines in Columbus.

Highland, Ind.—Bids will soon be received by the Highland Water & Power Co. for the construction of a new power plant at Highland.

Adair, Ia.—Local electric light plant will extend its wires to Anita, distance of eight miles.

Davis City, Ia.—By City to the Herald Publishing Co., of Lamoni, franchise to install and operate an electric system.

Dow City, Ia.—Plans are being prepared by Bruce & Standevin, Omaha, Neb., for the installation of an electric light system to cost about \$5,000.

Earlville, Ia.—Erection of electric light plant is being considered.

Pomeroy, Ia.—Engineer has been engaged to prepare plans and estimates for electric light plant.

Woodbine, Ia.—City will vote August 6, on granting franchise to Iowa-Nebraska Public Service Co., for light, heat and power.

Argonia, Kan.—Rollins & Westover, Rialto Bldg., Kansas City, Mo., are preparing plans for the construction of an electric light plant and water works system at Argonia; estimated cost, \$25,000.

Norton, Kan.—Preliminary arrangements are being made for the construction of a municipal electric light plant. Bonds to the amount of \$20,000 have recently been voted for the purpose.

Topeka, Kan.—City Clerk has been instructed by Board of City Commissioners to advertise immediately for bids on East Fourth st. great white way. Resolution providing for approval of special lighting system has passed Board of Commissioners.

Lexington, Ky.—Lexington Utilities Co. have granted franchise for erecting poles and stringing wires on a number of turnpikes in the county.

Portland, Me.—A committee consisting of Aldermen Bishop and Chaplin and Councilman Waite, Birnie and A. W. Jordan are preparing a report on street lighting for presentation at the August meeting.

Brunswick, Md.—City votes August 5 on \$20,000 bond issue for electric light plant.

Amesbury, Mass.—Amesbury Electric Light Co. contemplates the installation of a new equipment in its power plant.

Kalamazoo, Mich.—City Clerk has been instructed to notify the telephone, telegraph and power companies to place all wires in conduits on streets on which pavements will be laid.

Kalamazoo, Mich.—C. H. Farrell, chairman of Water and Light Commission, is considering employment of supervising engineer for building new municipal lighting plant and ornamental lighting system.

Duluth, Minn.—Petitions are being circulated for ornamental lighting of Superior st., from 18th to 22d aves west.

Excelsior, Minn.—City Council will grant franchise under suitable terms for construction of gas plant.

Mount Iron, Minn.—Citizens have voted bonds to amount of \$50,000 for construction of an electric light plant.

Stewartville, Mo.—Installation of an electric light system in Stewartville is contemplated.

McCook, Neb.—Construction of a municipal electric light plant is contemplated.

Bayonne, N. J.—Council has decided to install electric lights in the city hall.

Alden, N. Y.—The Depew & Lancaster Light, Power & Conduit Co., of Lancaster, has petitioned the Public Service Commission for approval of exercise of franchise granted by the town of Alden.

Bay Shore, L. I., N. Y.—Bids are to be advertised for supplying of lights for new lighting district which will include Brightwaters. District is L-shaped territory, beginning with Awixa ave. at railroad tracks, along tracks to Clinton ave., then south to bay, west to Sagalas creek, north to Howell's rd., east to Fifth ave., south to Suffolk boulevard, and east to Awixa ave.

Cicero, N. Y.—F. J. Auburn has been authorized by the Public Service Commission to erect light poles and wires to supply village with electricity.

Kenmore, N. Y.—The Public Service Commission has authorized the Buffalo General Electric Co. to exercise franchises granted by the Village of Kenmore to supply electricity for lamps and motors.

Newfane, N. Y.—The Newfane Electric Co. have applied to the Public Service Commission for permission to exercise franchises granted by the town of Newfane.

Olean, N. Y.—The Public Service Commission has authorized the Olean Electric Light & Power Co. to use \$76,929 derived from the sale of bonds for construction of a steam power plant.

Kalmath Falls, Ore.—B. E. Kerns has purchased the Thomas McCormick power plant below Keno and will construct power plant with view to supplying this city with current.

Pine Grove, Pa.—The Borough Council has passed an ordinance granting a franchise to the F. Troxell Electric Light Co. to install and operate an electric light plant.

Memphis, Tenn.—Kenneth A. Stewart is interested in the installation of an ornamental lighting system on Madison ave.

Palestine, Tex.—City Commission is considering plans for the installation of an ornamental lighting system in the business district.

Burlington, Vt.—The American Gas Co., which controls the Burlington Light & Power Co., have purchased the power at Bolton and at Middlesex. It is understood that the company proposes to connect with its system at Essex Junction, and will consolidate the three and furnish power in Barre and intermediate towns.

New Holstein, Wis.—The installation of a municipal electric light plant is reported to be under consideration.

Collingwood, Ont.—The ratepayers are reported to have voted to secure power from the Hydroelectric Commission of Toronto, and also to appropriate \$22,000 for extensions and improvements to the present plant.

Drummondville, Que.—Plans are being prepared for the reconstruction of the municipal electric light plant recently destroyed by fire.

CONTRACTS AWARDED

Rochester, N. Y.—By Board of Contract and Supply, for lighting library and historical rooms, to Rochester Electric Moto Co., at \$2,137.

Utica, N. Y.—By City to General Electric Co. of Schenectady, and Ornamental Lighting Pole Co. of New York, for installation of 60 luminous arc lamps on Genesee st.

Salem, O.—For installing 1,100 electric lighting poles, to Pittsburgh Concrete Pole Co.; estimated cost, \$18,000.

Fredericksburg, Va.—A committee composed of members of the City Council and citizens has decided to recommend the Council to enter into a contract with the Fredericksburg Water Power Co., to supply electricity for lighting the city and for pumping the water supply for a period of 27 years.

FIRE EQUIPMENT

Little Rock, Ark.—City Council has appropriated \$60,000 for a new fire headquarters building.

Alhambra, Cal.—Fire Protection Committee has asked for an appropriation of \$30,000.

Hemet, Cal.—Improvements in the fire department equipments are needed.

Los Angeles, Cal.—Chief Eley, of Fire Department, has asked Fire Commission to purchase new automobile.

Manteca, Cal.—A fire company will be organized and apparatus purchased.

Pasadena, Cal.—Fire Department has asked for an appropriation of \$65,600 for improvements during the coming year.

Salina, Cal.—Chief F. W. Winham is urging the purchase of a fire engine.

San Leandro, Cal.—City will probably issue bonds for the purchase of new equipment.

Sawtelle, Cal.—A special election has been called for August 15 to vote on issuing \$10,000 of bonds for purchase of fire equipment.

Grand Junction, Col.—New fire station will be erected here.

Wallingford, Conn.—Committee is inspecting motor apparatus in different cities with the view of purchasing a combination chemical and hose wagon for this city. John L. Luby, Chief Engineer.

Wilmington, Del.—City Council is in favor of purchasing an auto for the chief.

Rome, Ga.—Water Supply Committee of Georgia Fire Protection Committee advises the city to purchase two new electrically-driven pumps, a new supply main and a force main.

Worden, Ill.—L. Dornseif wants data on gasoline fire engines for villages.

Greensburg, Ind.—City Council is preparing plans for a new motor truck for the fire department.

Cedar Rapids, Ia.—Plans have been submitted for a new fire station to be equipped with motor apparatus.

Bangor, Me.—Committee has been appointed to investigate the cost of a motor combination chemical and hose wagon. For information address W. S. Mason, Chief of Fire Department.

Topeka, Kan.—Chief Wilmarth has asked for motor tractor, hook and ladder for Station No. 3. Sum of \$72,600 is asked for in estimate of 1913.

Baltimore, Md.—City will soon purchase motor engines for the suburbs of Towson and Govans.

Hyattsville, Md.—Chairman J. G. Holden of Town Council has made arrangements for a loan of \$7,000 for building and equipping building for a fire department.

Taunton, Mass.—Recommendation for second piece of motor-driven fire apparatus for Taunton Department is being considered by Fire Committee.

Gloucester City, N. J.—A. L. Mines, President, Board of Fire Commissioners, is urging City Council to purchase more hose and other apparatus.

Jersey City, N. J.—Board of Finance has asked for \$41,300 to purchase following apparatus: Four new combination wagons, one 75-ft. aerial motor-driven truck, two triple combination pumping chemical and hose motor cars, one motor wagon for telegraph department and one chassis for No. 19 Engine.

Lackawanna, N. Y.—City will erect a new fire station. Plans are under preparation.

New York City, N. Y.—New York Fire Department has approved plans for "super-dreadnaught" fire fighting vessel for service on downtown water front.

Newfane, N. Y.—Question of fire protection is being agitated.

Utica, N. Y.—Commissioner of Public Safety Church, has reported that City should have combination motor ambulance and police patrol and motor combination chemical and hose truck.

Winston-Salem, N. C.—Fire Committee will urge that new steamer, same size as present No. 2, be purchased at once and that there also be purchased up-to-date motor-driven combination hose wagon and chemical engine.

Ottawa, O.—At a recent meeting of Village Council proposition to purchase a fire auto was approved.

Birdsboro, Pa.—Friendship Fire Company is considering purchase of an engine.

Darby, Pa.—It is probable that the city will spend \$8,000 in erecting an additional fire house.

Royersford, Pa.—Automobile truck and apparatus will be purchased by the Friendship Hook and Ladder Company of Royersford.

Windber, Pa.—Committee is investigating motor trucks in neighboring cities with a view of purchasing one for this city.

Woodland Heights, Va.—At meeting of Citizens League a volunteer fire company was organized.

Hudson, Wyo.—Residents of this place have organized a volunteer fire department.

Winnipeg, Man.—Plans are being prepared for a new fire station to be erected here at an early date.

Montreal, Que.—Board of Control is inspecting sites for new fire stations.

CONTRACTS AWARDED

Dolgeville, N. Y.—By Village Board for

hook and ladder truck, to Seagraves Co., of Syracuse.

Niagara Falls, N. Y.—By Board of Fire Commissioners for new third st. firehouse, to Finley & Ella, at \$14,259, and for Highland ave. firehouse, to John Lennon, Son & Co., at \$9,180

BRIDGES

Alameda, Cal.—Bids will shortly be received for bridge to be erected at Niles. It will be 500 ft. long by 30 ft. wide.

Niles, Cal.—The Board of Supervisors have decided to construct a seven-span concrete bridge, to cost about \$70,000.

Lacon, Ill.—City Council is planning to expend \$100,000 for construction of new bridge.

Brookville, Ind.—The Commissioners have instructed F. R. Harder, engineer, to prepare plans and specifications for the construction of the Saladen Bridge across Blue Creek and the Scheel Bridge across Clear Fork.

Topeka, Kan.—Board of City Commissioners passed proclamation asking voters of Topeka to make known their ideas on bridge bond issue amounting to \$151,000, August 6. Bond issue calls for fifteen bridges and culverts all to be built of reinforced concrete as follows: Shunganunga creek, at Sixth ave., 130 ft. long, 50 ft. wide, \$25,000. Shunganunga creek at Lake st., 130 ft. long, 34 ft. wide, \$19,500. Shunganunga creek, at Kansas ave., 130 ft. long, 36 ft. wide, \$17,000. Shunganunga creek at Fourth ave., 130 ft. long, 28 ft. wide, \$15,000. Shunganunga creek at Seventh ave., 130 ft. long, 25 ft. wide, \$14,000. Shunganunga creek at Eighth ave., 130 ft. long, 28 ft. wide, \$14,000. Shunganunga creek at Topeka ave., 130 ft. long, 25 ft. wide, \$11,500. Shunganunga creek at Lincoln st., 130 ft. long, 25 ft. wide, \$11,750. Shunganunga creek at Davies street, 130 ft. long, 25 ft. wide, \$6,850. Shunganunga creek at Fifteenth st., 130 ft. long, 25 ft. wide, \$6,000. Euclid ave., west of Santa Fe shops, 30 ft. long, 50 ft. wide, \$3,400. Ward's creek at The Drive, 40 ft. long, 20 ft. wide, \$2,200. Ward's creek at Laurel ave., 40 ft. long, 20 ft. wide, \$1,900. Biddle creek at Tenth ave., 18 ft. long, 60 ft. wide, \$1,400. Butcher creek at Twenty-first st., 40 ft. long, 20 ft. wide, \$1,500.

Barbourville, Ky.—County Court has ordered construction of six steel bridges.

Forest, Miss.—Scott County and city of Forest will construct one 80-ft. and one 40-ft. steel bridge in connection with road and street developments.

Meridian, Miss.—Sum of \$10,000 will be expended on bridges, culverts, etc.

Camden, N. J.—Board of Freeholders of Camden County is considering the construction of a bridge over Newton Creek, between Camden and Gloucester City.

Newark, N. J.—Joint bridge Committee of Essex, Hudson and Bergen counties, has approved plans for new structure to replace present Belleville bridge over Passaic. Plans had been prepared for more than a year at direction of old Board of Freeholders.

Geneseo, N. Y.—Bonds for \$17,000 have been voted for repairing the bridge over the Geneseo River, between Geneseo and York.

Niagara Falls, N. Y.—At meeting of Board of Public Works resolution by Commissioner Leberherz to place \$6,750 in next year's budget for replanking of Pierce ave. bridge, was adopted.

Yonkers, N. Y.—Board of Supervisors of Westchester County, White Plains, has decided to rebuild the bridge over the Bronx River, between Yonkers and Mount Vernon.

Toledo, O.—City Engineer Tonson is preparing plans for steel bridge across Swan Creek at Erie st.

Philadelphia, Pa.—Construction of new bridge across Tacony creek is being considered.

Moscow, Tenn.—Several steel bridges will be constructed.

Spokane, Wash.—County Engineer C. L. Graves, has submitted plans for viaduct over railroad, to cost \$22,000.

Madison, Wis.—Two million dollars' worth of State aid bridges and roads will be built in 1913.

CONTRACTS AWARDED

Miami, Fla.—The contract for constructing a 60-ft. draw concrete bridge over Biscayne Bay, has been awarded to J. C. Cook Co., of Miami.

Tampa, Fla.—By City Council, to Edwards Construction Co., for constructing La Fayette st. bridge, at \$189,747.

Gloucester, N. J.—The Gloucester County Freeholders awarded contracts

for two bridges to Edward Steelman, of Salem, at \$1,795 and \$1,745, respectively.

Albany, N. Y.—By Superintendent of Public Works D. W. Peck, for construction of bridge over Black river canal in East Dominick st., in Rome. Contract was awarded to Lupfer & Remick, of Buffalo, for \$19,874. Engineer's estimate was \$22,790.

Columbus, O.—To construct viaduct over Iuka ave., on Summit st., to John M. Hina, Columbus, at \$34,500.

Condersport, Pa.—By County Commissioners, to Thomas Leete, for constructing bridge, at \$1,894.

Pittsburgh, Pa.—The contract for repairing south shore pier of Tenth St. Bridge, has been awarded to Adam Laidlaw & Co., at \$7,389.

Elkins, W. Va.—Contract for constructing a steel bridge, 105-ft. span, 14-ft. roadway, with stone and concrete abutments across Tygarts Valley at Mill Creek, has been awarded to the Roanoke Bridge Co., of Roanoke, Va.

MISCELLANEOUS

Alabama City, Ala.—Citizens voted \$50,000 bond issue for following purposes: \$26,500 for water works; \$18,500 for sewerage and \$5,000 for new City Hall.

Alhambra, Cal.—Ordinance calling bond election for public improvements, including fire house and equipment, parks, incinerator and site, public library and site, city hall and site, and bridges, has been passed to its first reading at meeting of City Trustees. August 6 is set for day of election.

San Francisco, Cal.—Plans for improvement of Mission parks and playgrounds have been approved.

Jacksonville, Fla.—Board of Bond Trustees will offer \$250,000 bonds for sale, October 15.

Atlanta, Ga.—Resolution has been introduced by Councilman Thomson, appropriating \$1,000 to buy tree-moving device for Park Department. It has been referred to Finance Committee.

Atlanta, Ga.—The Finance Committee of Council on July 12, agreed to a resolution which is said to be acceptable to the New York Destructor Co., of New York, N. Y., the successful bidder for the proposed garbage crematory. Under the agreement reached the company will retain the title to the plant, but the city will control and operate it under the supervision of the company. The company is to first build the garbage plant at a cost of \$276,000. Later, if the city wishes to make some financial arrangement, it can have the additional electric generating plant built. Both plants can be built within 310 days. The electric plant is to cost \$102,000. The heat from the garbage is to furnish all the steam for the electric plant. The company is to give a bond for \$376,000 to be approved by the mayor. The plant is to be paid for in yearly installments, \$50,000 this year and \$75,000 each succeeding year. Work will begin at once.

Des Moines, Ia.—River improvement bonds totaling \$124,000 have been authorized by City Council.

Waterloo, Ia.—Resolution has been adopted authorizing remodeling of city hall building.

Waterloo, Ia.—Resolution has been adopted authorizing purchase of one Chalmers motor car at cost of \$1,600, for use of Police Department.

Indianapolis, Ind.—William E. Davis, Chairman of the Board of Public Safety, has sent request on behalf of Board to City Comptroller Wallace, asking him to recommend to City Council issuance of \$200,000 of bonds for purpose of erecting city building on city's property, at Alabama and New York sts.

Topeka, Kan.—Commissioner E. B. Stotts wants \$50,000 for parks next year, instead of usual \$26,000. Animal house for zoo like one in Swope park, Kansas City, is contemplated. Cost, \$5,000.

Louisville, Ky.—Board of Park Commissioners have agreed to equip playground adjoining Sixteenth and Magazine negro school.

Ishpeming, Mich.—Mayor Barnett and the Health Commission are reported to be considering the construction of a garbage crematory.

Jersey City, N. J.—Board of Finance has appropriated \$3,500 for improving Bayside Park, and \$25,000 for Montgomery Park.

Newark, N. J.—Police Board has decided to purchase automobile for use of department.

Albany, N. Y.—Plans for barge canal terminal for Schenectady to cost about \$300,000, which have been approved by

Schenectady Board of Trade have been adopted by State Canal Board.

Poughkeepsie, N. Y.—Superintendent Harding has asked Council for \$2,500 for purchasing another flushing machine.

Utica, N. Y.—Public improvement bonds of city of Utica aggregating \$107,500 in value, have been sold by Commissioner Reusswig.

Cuyahoga Falls, O.—There is reported to be a movement on foot here to construct garbage disposal plant.

Erie, Pa.—The State Commissioner has approved plans for the construction of retaining walls on State st. and the canal basins of the harbor; probable cost, \$20,000. City will co-operate with the State in the construction.

Erie, Pa.—Resolution has passed to advertise for bids for the sale of \$185,000 in city bonds, including \$10,000 for temporary sewage disposal plant, \$10,000 for lower State st., \$5,000 for opening of State, from Twenty-sixth st. to city line; \$3,500 for hook and ladder truck for South Erie; \$5,000 for improvement for Ash st. subway; \$55,000 for conduits and storm water sewer system, and \$102,000 for general improvements.

Uxbridge, B. L.—Highway Commissioner Willard Holbrook has recommended purchase of steam roller and stone crusher.

Spokane, Wash.—Commissioner C. D. Coates will ask for from \$100,000 to \$200,000 to establish municipal store.

Sistersville, W. Va.—Mayor C. N. Kilmall and Council are considering building a municipal ice plant.

Wheeling, W. Va.—The Ohio River Board has recommended appropriation of funds for erection of dams No. 10, above Steubenville; No. 31, a short distance below Portsmouth, and No. 43, below Louisville. Large sums were also recommended for work at dam No. 19, at Parkersburg, and No. 28, at Huntington, which are but about one-fourth completed.

CONTRACTS AWARDED.

Anniston, Ala.—For construction of new Calhoun County jail, to Little-Clecker Construction Co., of this city, and Pauley Jail Co., of St. Louis, at price bid by Pauley Jail Co. of \$20,856.

Los Angeles, Cal.—By Board of Public Works for second fill at Wilmington, to Standard American Dredging Co., at \$100,000.

Hartford, Conn.—John Wise submitted only bid, July 16, for building bath house complete. Bid was \$9,074.

Jacksonville, Fla.—To Buffalo Steam Roller Co., Buffalo, for furnishing one

7-ton tandem road roller. G. L. Barnard is Duval Co. engineer.

Fall River, Mass.—By Park Commissioners, to Buffalo Steam Roller Co., for steam roller, at \$3,150.

Bayonne, N. J.—By Council, to Crescent Automobile Co., Jersey City, for Chief's wagon, at \$2,888; automobile for Street Commissioner, to same, at \$2,148. Both machines are Cadillacs.

Jersey City, N. J.—By Mayor and Special Committee, to J. Massie Rhind, for Peter Stuyvesant statue, at \$15,000.

Jersey City, N. J.—Michael Whalen, a Fire Commissioner, was low bidder for contract providing for erection of a new city stable, and contract was awarded to him. His bid was \$15,467. Other bids were submitted by Bernard Vezzetti for \$16,786, and P. J. Exter Co. for \$17,750.

Rochester, N. Y.—By Board of Contract and Supply, for improvements to shelter in playground, to W. H. G. Hammond, at \$2,400.

Philadelphia, Pa.—To Cramp Shipbuilding Co., by the Department of Wharves, Docks and Ferries, to repair city iceboats Nos. 1 and 2, and police boat "John Weaver." Their bid was \$2,950.

Burlington, Vt.—Board of Health has recommended that garbage contract be awarded to E. T. Daley, at \$2,000 a year.

TOO LATE FOR CLASSIFICATION

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK.	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Michigan.....	Bay City.....	July 29, 9 a.m.....	Constrn. macadam pav't.....	Bd. Pub. Wks.
Maine.....	Windham Center.....	July 31, 2 p.m.....	Constrn. 3,000 ft. state road.....	Selectmen.
Kansas.....	Ottawa.....	July 31, 7:30 p.m.....	Constrn. 10,220 sq. yds. macadam, 9 ins. thick; also 3,450 sq. yds. brick paving.....	G. E. Strauchon, City Clk.
Ohio.....	Toledo.....	Aug. 1, noon.....	Paving st., Medina blk. stone, vitrified brk., creosoted wood blks., sheet asphalt or bitulithic.....	F. G. Stockton, Sec'y.
Pennsylvania.....	Altoona.....	Aug. 2.....	Repaving streets.....	Bd. Pub. Wks.
New Jersey...	Passaic.....	Aug. 2, 10:30 a.m.....	Grading Autumn St.....	City Clk.
New Jersey...	Roselle.....	Aug. 2, 8 p.m.....	Constrn. 7,750 ft. concrete curbing and gutter.....	J. L. Bauer, Boro. Engr.
Ohio.....	Lisbon.....	Aug. 2, 10 a.m.....	Grading and paving with brick, 1 mile, Salem-Ellsworth road; est. cost, \$14,622.64.....	J. R. Marker, State Highway Comr.
New Jersey...	Kirkwood.....	Aug. 5, 3 p.m.....	Constrn. concrete sidewalks.....	S. L. Burgess, Township Clk.
Indiana.....	Paoli.....	Aug. 6, 2 p.m.....	Constrn. 13,390 ft. state road.....	A. B. Ham, Bd. Comrs.
New York.....	Niagara Falls.....	Aug. 6, 7:30 p.m.....	Constrn. pav'ts on 4 sts.....	T. H. Hogan, City Clk.
Indiana.....	Muncie.....	Aug. 12, 10 a.m.....	Improving highway.....	F. M. Williams, Co. Audr.
Ohio.....	Lisbon.....	Aug. 12, 1 p.m.....	Constrn. 1½ miles brick road.....	Co. Comrs.
Rhode Island.....	Woonsocket.....	Aug. 12, 8 p.m.....	Re-establishing grades on number of sts and sidewalks.....	Wm. O. Park, City Clk.
Missouri.....	Fulton.....	Aug. 15.....	Constrn. 3,630 sq. yds. brick paving; 1,550 ft. concrete curb.....	P. D. Thurmond, City Engr.
Ohio.....	Toledo.....	Aug. 19, 10 a.m.....	Grading, draining and macadamizing county roads.....	C. J. Sanzenbacher, Co. Audr.
SEWERAGE				
Michigan.....	Bay City.....	July 29, 9 a.m.....	Constrn. 30-in. reinforced concrete tile sewer.....	R. O. Woodruff, Com. Bd. Pub. Wks.
Indiana.....	Kokomo.....	July 29, 10:30 a.m.....	Constrn. sanitary sewer.....	City Clk.
Delaware.....	Wilmington.....	July 30, 10 a.m.....	Furn. foreign and domestic Portland cement, terra cotta, pipe, castings, sewer bricks, sidewalk bricks, etc.....	L. B. Christy, Sec'y S. & Swr Dept.
Connecticut...	Waterbury.....	July 30, 8 p.m.....	Constrn. sewers in several streets.....	R. A. Cairns, City Engr.
Ohio.....	Akron.....	July 31, noon.....	Constrn. storm water sewer.....	M. Pillmore, Dir. Pub. Serv.
New Jersey...	Passaic.....	Aug. 2, 10:30 a.m.....	Constrn. sanitary sewer.....	City Clk.
Connecticut...	Hartford.....	Aug. 13, 11 a.m.....	Constrn sewers in several streets.....	Bd. Contract & Supply.
WATER SUPPLY				
Oregon.....	Cornelius.....	July 29, 7:30 p.m...	Constrn. water system.....	V. H. Massey, City Recrdr.
LIGHTING AND POWER				
Ohio.....	Toledo.....	Aug. 3, noon.....	Installing conduits for wires in Cherry St. bridge.....	Dir. Pub. Serv.
New Jersey...	Freehold.....	Aug. 14, 11 a.m.....	Furn. and lighting during summer season, 2 100-watt Tungsten lights on Woodgate Ave. bridge, Long Branch.....	J. M. Corlies, Dir. Bd. Freeholders.
BRIDGES				
Pennsylvania.	Pittsburgh.....	Aug. 1, noon.....	Constrn. concrete arch bridge and creosoted wood block floors on three bridges.....	R. J. Cunningham, Co. Controller.
MISCELLANEOUS				
Massachusetts.	New Bedford....	July 29, noon.....	Furnishing varying lengths of drill steel.....	C. F. Lawton, Supt. Sts.
Massachusetts.	New Bedford....	Aug. 2, 3 p.m.....	Furnishing steel metal furniture.....	New Bedford Water Board.

STREET IMPROVEMENTS

Sanford, Fla.—Twenty-two miles of brick road will be constructed at early date.

Vincennes, Ind.—Board of Public Works has adopted resolution calling for improvements of Bayou st., from Third to 11th sts., by construction of concrete walks and stone curbing.

Lawrence, Mass.—Orders have been adopted for billing of several streets.

Lynn, Mass.—City will expend \$4,000 to \$5,000 upon improvements.

Saginaw, Mich.—Resolutions have been adopted authorizing issuance of street improvement bonds for \$45,000 east and \$35,000 west.

Butte, Mont.—Bill providing for paving of Granite alley has been adopted.

Manchester, N. H.—Bids have been opened in City Messenger's office for \$100,000 street and sewer bonds and Fi-

nance Committee of Common Council has made award to Merrimack River Savings Bank, which was highest bidder.

Brooklyn, N. Y.—Borough President Steers will receive bids for repaving of 44 sections of streets in Brooklyn July 31. Total amount of contracts to be awarded on those bids aggregates almost a million dollars.

Altoona, Pa.—City Engineer will shortly advertise for bids for resurfacing work.

Erie, Pa.—Ordinance has been passed providing issue and sale of \$5,000 bonds for grading Front st., from Millcreek to Cascade sts., for intercepting sewer.

Erie, Pa.—Ordinance has been passed providing for paving of Newman st., from Fifth st. to Third st.

Greenville, Pa.—In special election held proposition to bond town for \$100,00 for additional paving carried by 77 votes.

PROPOSALS

FILTRATION PLANT

Charleston, Ill.

Sealed bids will be received by the City Council of the City of Charleston, Ill., at the office of the City Clerk, until 2 o'clock p. m., of Aug. 1, 1912, for the following work:

1. Reinforced Concrete Sedimentation Basins and Filter Tanks;
2. Equipment of Filter Tanks, 1,000,000 gallons daily capacity;
3. Building, including Pump Pit, Pipe Gallery, Chemical Storage Room and appurtenances. Plans and specifications may be had from the City Clerk at his office.

A certified check on some responsible bank for 1 per cent of the bid must accompany each bid.

T. T. SHOEMAKER, Mayor.

PROPOSALS

SEWERAGE

NOTICE OF RECEPTION OF BIDS for the BINGHAMTON-LESTERSHIRE TRUNK SEWER.

Binghamton, N. Y.
Sealed proposals will be received by the Board of Contract and Supply of the City of Binghamton, New York, and the Board of Trustees of the Village of Lestershire, New York, until the hour of 4 o'clock in the afternoon of the 7th day of August, 1912, for the following:

Construction of a joint trunk sewer from the intersection of Riverside Drive and interceptor "A" in the Village of Lestershire, to the intersection of Glenwood Avenue and Lake Avenue in the city of Binghamton, together with the necessary manholes, "Y" connections and other appurtenances as shown on plans.

The length of said sewer is 11,283 ft., of which 2,638 ft. is 30-in. pipe, and 8,645 ft. is 27-in. pipe.

Bids will be received on vitrified tile, sectional vitrified sewer blocks and concrete pipe.

Plans and specifications can be obtained by addressing Fr. Fancher M. Hopkins, City Clerk, City of Binghamton, and depositing check for \$10.00, which will be returned upon return of plans and specifications.

Proposals shall be accompanied by a certified check, cash or New York draft, in the sum of 5 per cent of the amount of the bid, and successful bidder will be required to give a bond for 50 per cent. of the amount of the contract.

BOARD OF CONTRACT AND SUPPLY,
CITY OF BINGHAMTON;
BOARD OF TRUSTEES,
VILLAGE OF LESTERSHIRE. (4.5)

SEWERS

NOTICE TO CONTRACTORS.

Iron Mountain, Mich.

Sealed bids for the construction of 1,370 ft. of 48-in. reinforced concrete sewer on Kimberly Avenue, from manhole on "D" street, to Hughitt Street, with manholes and 300 ft. of 6-in. laterals;

400 ft. of 24-in. tile sewer on Foster Street, from the center of "C" Street to Mud Lake;

480 ft. of 24-in. tile sewer on Hughitt Street, from manhole on Kimberly Avenue to Foster Street;

980 ft. of 24-in. tile sewer on "A" Street, from manhole on Kimberly Avenue to manhole on Carpenter Avenue;

together with necessary manholes, catchbasins and 650 ft. of 6-in. laterals, according to the plans and specifications therefor, prepared by the City Engineer and now on file in the office of the City Clerk, and for the furnishing of all labor and material necessary therefor, will be received by the Board of Public Works of the City of Iron Mountain, Mich., up to the 3d day of August, next, at 9 a. m.

All bids on concrete sewer must include a bid by the foot for an extension at the north end not exceeding 350 ft. in length, together with 130 ft. of 6-in. laterals and 2 manholes, and must be accompanied by a certified check for \$400, and bidders must furnish specifications and drawings showing kind of pipe to be used.

Bids on the tile sewer must include all three sewers in one lump sum, and must be accompanied by a certified check for \$250.

All bids shall be addressed to City Clerk, Iron Mountain, Mich., and shall be endorsed "Concrete Sewer Bid" and "Tile Sewer Bid," respectively.

The Board reserves the right to reject any and all bids.

By order of the Board of Public Works.

SOL. BEAUPARLANT, City Clerk.

Dated July 17, 1912. (4.5)

SEWERS

NOTICE TO CONTRACTORS.

Schenectady, N. Y.

Sealed proposals will be received by the Board of Contract and Supply of the City of Schenectady, at their office in the City Hall Annex, until 2:30 p. m., Wednesday, Aug. 7, 1912, for the construction of a System of Surface Water Sewers in the Tenth Ward. The approximate estimate of the work to be done is as follows:

30,310 cu. yds. of earth excavation;

20 cu. yds. of rock excavation;

83 cu. yds. of 1-3-5 per cent. concrete;

100 lin. ft. of 10-in. vitrified tile;

4,830 lin. ft. of 12-in. vitrified tile;

10,493 lin. ft. of 15-in. vitrified tile;

1,330 lin. ft. of 18-in. vitrified tile;

2,750 lin. ft. of 20-in. vitrified tile, double strength;

1,458 lin. ft. of 24-in. vitrified tile, double strength;

458 lin. ft. of 30-in. vitrified tile, double strength;

1,627 lin. ft. of 36-in. vitrified tile, double strength;

976 lin. ft. of manholes, vertical measurement;

122 catchbasins;

96 lin. ft. of 16-in. cast-iron pipe;

36 lin. ft. of 20-in. cast-iron pipe;

6,000 board feet of lumber.

Plans and specifications may be obtained from the office of the City Engineer, W. Thomas Wooley, by making a deposit of Ten (\$10.00) Dollars, which deposit will be refunded at such time as the plans and specifications shall be returned.

All bids must be made upon the printed pages which are part of this specification and enclosed in a sealed envelope directed to the Board of Contract and Supply, and endorsed on the outside of the envelope "Proposal for Constructing Surface Water Sewers in the Tenth Ward."

Each bid must be accompanied by a draft or a certified check for Four Thousand (\$4,000.00) Dollars, issued by a National or State bank, in good credit with the State of New York, and made payable to the "City of Schenectady."

The Board of Contract and Supply reserves the right to reject any or all bids.

FRED E. JOHNSON, Secretary,
(4.5) Board of Contract and Supply.

CONTRACTORS

BIDS OPENED JULY 31, 1912

for the construction of Section 1A of the Lexington Avenue Rapid Transit Railroad of New York City.

Two-track subway in Church Street, Vesey Street and Broadway from Church and Dey Streets to Broadway and Park Place.

Write or call concerning form of contract, plans and specifications.

PUBLIC SERVICE COMMISSION

For the First District

154 Nassau Street New York City.

CITY BONDS

Winchester, Ky.

Notice is hereby given that the Board of Council of the City of Winchester, Ky., will at the Council Chamber in said city on the 2d day of August, 1912, at 7:30 P. M., offer for sale 18 City Hall Bonds of \$1,000 each, dated Feb. 8, 1911, due 20 years from date, bearing interest at the rate of 4½ per cent. per annum, interest payable semi-annually.

Sealed bids will be received by J. A. Hughes, Mayor, up to the hour of sale. No conditional bids will be considered.

S. B. TRACY, City Clerk.

(3.4.5)

FOR SALE

Twenty horse-drawn street watering carts, mostly steel tanks, and all in good condition.

AMERICAN CAR SPRINKLER CO.
Worcester, Mass.

NOTICE TO BUILDING CONTRACTORS

City of Schenectady, N. Y.

Notice is hereby given that sealed proposals will be received by the Board of Contract and Supply of the City of Schenectady, New York, at their office in the City Hall Annex, until 2:30 p. m., Wednesday, July 31, 1912, for the general construction, plumbing and gas fitting, heating and ventilating and electric work for the proposed additions and alterations to two (2) Schools: Washington Irving School on Mumford Street and McKinley School on Willett Street.

Each proposal shall be accompanied by cash or certified check for five per cent. (5%), to be forfeited to the City of Schenectady as liquidated damages should the party to whom the work is awarded fail to enter into contract with the said city and furnish the required security within ten days after the date of the award. Should the contract be awarded to any person the deposits of all bidders will be retained until the said contract is fully executed, not exceeding two weeks from the date of said award. The right is reserved to reject any or all bids.

Each proposal must be on blanks furnished by the City Engineer and Architect, must be in a lump sum for the work complete and must contain no explanations or limitations whatever.

No proposal may be withdrawn after it has been submitted. All proposals must be inclosed in sealed envelopes, the outside thereof to be indorsed with the title of the work for which the tender is submitted.

Plans may be seen and specifications and bidding blanks procured at the office of the City Engineer and Architect, Mr. W. Thomas Wooley, No. 447 Franklin Street, Schenectady, New York. Blue-print plans to a limited number may be procured by any person so desiring by depositing with the said Engineer and Architect the sum of \$25.00, the said sum to be returned to person making the deposit upon the surrender of the plans on or before the 4th day of August, 1912.

FRED E. JOHNSON,

Sec'y Board of Contract and Supply.

3-4

BRIDGE

Auburn, N. Y.

Plans and proposals for the construction of a Steel Bridge in North Street, over the Owasco River, will be received by Hon. Thos. H. O'Neill, Mayor, up to 8 o'clock P. M., Aug. 6, 1912, and at a meeting of the Common Council to be held on the evening of that day said proposals will be opened and considered.

Each plan and proposal must be accompanied by a certified check in the sum of \$500 or a bond in an amount equal to 10 per cent. of the gross amount of the proposal, conditioned for the execution of the contract in case a proposal shall be accepted by the city. Further information may be obtained of Elbert C. Aldrich, City Engineer.

(3.4)

J. S. HANLON, City Clerk.

SECOND HAND Transits and Levels For Sale

Gurley Transit (Level Bubble and Vertical Circle)	\$127.50
Eugene Dietzgen Transit (Level Bubble)	145.00
Stackpole Transit (Level Bubble)	100.00
Keuffel & Esser 15" Wye Level	57.50
Eugene Dietzgen 18" Wye Level	80.00
Stackpole 17" Wye Level	55.00

Complete List furnished immediately upon request

THE ENGINEERING AGENCY, Inc.
Monadnock Block, CHICAGO

FOR SALE CHEAP

Wrought Pipe, second hand, all sizes, recut and rethreaded suitable for all classes of work. Prices quoted on application.

MARINE METAL & SUPPLY CO.
167 South Street, New York City